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ABSTRACT

This handbook for state and local education agencies is intended as a reference to assist in initiating and/or improving follow-up systems or studies of former vocational students. A companion volume focuses on follow-up studies of special populations (see Note). Section 1, which contains information on use of the handbook, also introduces the follow-up study profile around which the handbook is organized. A rationale for doing follow-up studies is presented in section 2, which discusses such related topics as definitions, issues, legislation, and decision making. Sections 3-6 comprise the steps required in designing, planning, implementing, and evaluating a vocational follow-up study or system. Specific titles are Designing and Planning Follow-Up Studies, Procedures and Mechanics for Conducting Follow-Up Studies, Data Analaysis and Reporting Procedures, and Using Follow-Up Data and Studies. These self-contained sections are arranged in chronological order, although interrelated steps/activities may occur simultaneously. Other sections provide a glossary, bibliography, index, and appendixes including follow-up questionnaires and forms and sample materials. (YLB)

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Research and Development Series No. 171

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EVALUATION HANDBOOK

VOLUME 1:

GUIDELINES AND PRACTICES FOR FOLLOW-UP STUDIES OF FORMER VOCATIONAL EDUCATION STUDENTS

Stephen J. Franchak
Janet E. Spirer

CE 022 866

The National Center for Research
in Vocational Education
The Ohio State University
1960 Kenny Road
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1978

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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FOREWORD

Personnel in vocational education have struggled for years with the need to obtain credible data and information for purposes of program improvement and accountability. This need was further heightened by passage of the Education Amendments of 1976. Throughout this legislation, are requirements for different agencies and groups to obtain, supply, interpret, and aggregate different kinds of evaluative data for program improvement and, primarily, for accountability purposes.

The need to assist state education agencies, local education agencies, and others in designing, adapting, and conducting more efficient and effective follow-up studies is one which is immediate. This assistance is immediate because state boards are required to provide data on program completers and leavers beginning with 1977-78 students. Few states are presently equipped to provide statistically valid follow-up data on completers, early leavers, and employers. Similarly, evidence exists to support the view that few states have a comprehensive system which allows them to obtain data elements, such as those required in Section 104.402 and 104.404 (this is especially true of data requirements for completer and leaver/employer/employee satisfaction, wages, and rates of employment) of the rules and regulations for the Education Amendments of 1976.

Recognizing these needs, a study sponsored by the Bureau of Occupational and Adult Education, under terms of the U.S. Office of Education contract with the National Center for Research in Vocational Education was undertaken. The main objective was to develop a handbook on follow-up studies.

The handbook is strongly user oriented but is more than a cookbook approach. It not only contains specific techniques that can be applied but also contains information about:

- Legislation requirements
- Development of forms and instruments

- Sampling pros and cons
- Guides for interpreting data
- Alternatives for reporting

A bibliography of selected related materials and a glossary are also enclosed. Also, the handbook (1) provides clarification of the content necessary for follow-up studies, (2) provides guidelines for improving the technical aspects of follow-up, and (3) provides information to increase efficiency and effectiveness of follow-up studies.

The National Center is particularly indebted to Stephen J. Franchak, Project Director, and Janet E. Spirer, Graduate Research Associate, who prepared this document. Significant contributions to the handbook were also made by N. L. McCaslin, Associate Director, and F. L. McKinney, Program Director of the Evaluation and Policy Division where the project was conducted. Other members of the evaluation staff who contributed ideas and assisted in the review process were Marion Franken and William Stevenson. Other members of the National Center staff who assisted in the review process were Wes D. Budke and James Watkins.

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Robert E. Taylor,
Executive Director
The National Center for
Research in Vocational
Education

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SECTION I

USING THE HANDBOOK

SECTION ONE

USING THE HANDBOOK

Purpose

The purpose of this handbook is to identify exemplary strategies and tactics that will assist state and local education agencies in initiating and/or improving follow-up systems or studies of former vocational students. Students, for the purposes of this handbook, are defined as completers, early leavers, or dropouts from regular vocational programs.

This handbook attempts to synthesize concepts, practices, and materials from the current state of the art rather than add significant new information. Pursuant to this aim, an attempt has been made to systematically survey the literature on follow-up, interview leading practitioners in the field, inspect relevant laws and regulations, review exemplary systems and instruments, and discuss follow-up system needs with state and local education agency personnel. The problem became one of making rational order of the existing literature and follow-up efforts and presenting the best techniques, approaches, and concepts in one convenient sourcebook.

Compliance with the law is a major element permeating this handbook. The Educational Amendments of 1976 (P.L. 94-482) require every educational agency at the state and local level to collect and report reliable and valid data regarding vocational program effectiveness. Such program effectiveness data include student follow-up results. This handbook provides specific aids toward meeting this requirement of the law. Additionally, the interrelated regulations of several different laws are addressed in the handbook in subsections such as confidentiality and privacy considerations, and ethnic and sex equity guidelines.

Audience

The target audience for this handbook is varied. Potential users include, but are not limited to, state and local vocational administrators (at all levels), policy

makers for vocational programs, program funding agents, and state and local vocational program staff directly responsible for the operation of a follow-up system or study. Naturally, not all of the handbook's sections are equally important to each member of such a varied group of users. The educational policy maker has vastly different needs from a staff member responsible for the distribution and collection of follow-up data. Many users may be in need of information on how to improve upon an already existing follow-up system. Thus, it is recommended that the initial task of the reader be to examine the Table of Contents and decide which section or subsections are most relevant to his or her needs, or review and complete the "Checklist for Assessing Individual Problems" and the "Follow-up Study Profile" in the following subsection.

To the extent possible, each section of the handbook has been written to provide readers with enough relevant information about major concepts, alternative approaches, and specific content to make informed decisions on which step or approach to perform next. Key references have been incorporated into the text to assist in this task.

Organization

The handbook is divided into ten sections and numerous subsections. Sections 3-6 comprise the steps required in designing, planning, implementing, and evaluating a vocational follow-up study or system. These sections are arranged in the typical chronology of completing a follow-up study. However, as the perceptive reader will note, many of the steps are interrelated and, in actual practice, activities from several sections may occur simultaneously.

Each section in the handbook is self-contained. The reader can expect to become familiar with the major concepts, alternative approaches (where applicable), and techniques associated with the topic of each section. Within each section are major references or sources for further information or material. The sections are further divided by subsections denoted with topical side headings. This handbook is not an instructional system with objectives, pretests, learning materials, and posttests for each section. Rather, the major organizational construct employed in the development of this document was that it be a "ready-reference"[1] on the topic of vocational students follow-up. The checklist for assessing individual problems provides a means of identifying and prioritizing follow-up study problems.

Checklist for Assessing Individual Problems

Do these problems exist for you?				Rank Order by Extent of Problem
Yes	Some-what	No		
___	___	___	1. Lack of understanding of purpose for doing follow-up.	___
___	___	___	2. Lack of communication of objectives for doing follow-up.	___
___	___	___	3. Lack of communication of procedures for doing follow-up.	___
___	___	___	4. Lack of clear definitions which are crucial to any effort to collect reliable and valid follow-up data.	___
___	___	___	5. Inability of people to use follow-up data in decision making.	___
___	___	___	6. Unwillingness of people to use follow-up data in decision making.	___

Follow-up Study Profile. The handbook is organized around the follow-up study profile which appears on page 6. The profile presents some steps for designing, planning, conducting, and using follow-up studies by highlighting follow-up study issues that require critical decisions of input. It contains the major questions that persons involved with designing, planning, conducting, and/or using follow-up studies should ask.

The profile is designed to help you:

- o think through the follow-up study process
- o identify potential weak aspects of your follow-up study plan
- o become familiar with follow-up study issues that you might not have considered
- o gain an overview of the contents of the handbook
- o decide which sections of the handbook you should study in depth, read carefully, or skim

The profile is simple to complete. In the left hand column, rate your current knowledge about each of the questions concerning follow-up studies from:

Current Knowledge				
None		Partial		Full
1	2	3	4	5

The page numbers in the right hand column refer to the section of the handbook which provides more detailed information about each question. An example appears below.

Current Knowledge None Partial Full 1 2 3 4 5		Page(s)
	1. *Rationale.* Why conduct a follow-up study?	11-13
	2. *Definition.* What is a follow-up study?	15
	3. *Issues.* What are the problems and issues in planning, conducting, and using follow-up studies?	16-17

Follow-up Study Profile

	Current Knowledge: None 1	2	3	Partial 4	Full 5			Page(s)
Rationale for Doing Follow-up Studies	.	.	.	.	.	1.	*Rationale.* Why conduct a follow-up study?	11-13
	.	.	.	.	.	2.	*Definition.* What is a follow-up study?	15
	.	.	.	.	.	3.	*Issues.* What are the problems and issues in planning, conducting, and using follow-up studies?	16-17
	.	.	.	.	.	4.	*Legislation.* What are the legislative mandates for follow-up studies?	17-20
	.	.	.	.	.	5.	*Decision Making.* How are follow-up studies an aid for decision makers?	20-21
Designing and Planning Follow-up Studies	.	.	.	.	.	6.	*Plan(s).* What are the specific tasks and personnel responsibilities for a follow-up study?	26
	.	.	.	.	.	7.	*Objectives.* What are the objectives of a follow-up study?	16-35
	.	.	.	.	.	8.	*Instruments.* What type(s) of follow-up instruments should be developed, adopted, or adapted?	36-39
	.	.	.	.	.	9.	*Questions.* What type(s) of questions should be included in a follow-up study?	36-39
	.	.	.	.	.	10.	*Questionnaires.* What are the characteristics of a "good" questionnaire?	39 49-52
	.	.	.	.	.	11.	*Stereotyping.* How can sex and ethnic stereotyping be eliminated in follow-up studies?	47-48
	.	.	.	.	.	12.	*Readability.* How can you determine the appropriate readability level of the follow-up instrument?	53-59

Current Knowledge None 1	2	3	Partial 4	Full 5		Page(s)
.	.	.	.	.	13. *Reliability & Validity.* How can you determine that the follow-up instrument is reliable and valid?	61-62
.	.	.	.	.	14. *Sampling.* What is the purpose of sampling?	63
.	.	.	.	.	15. *Sampling Standards.* What are the characteristics of a good sample?	63-64
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.	.	.	.	.	17. *Size.* What is an appropriate sample size?	68-69
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.	.	.	.	.	24. *When to Do Follow-up.* When should follow-up studies be conducted and how often?	92-95
.	.	.	.	.	25. *Longitudinal.* What are longitudinal follow-up studies?	95
.	.	.	.	.	26. *Confidentiality.* What safeguards are needed to protect confidentiality of privacy of data?	96-97

Procedures and Mechanics for Conducting Follow-up Studies

	Current Knowledge None 1 2 Partial 3 4 Full 5		Page(s)
	. . . . .	27. *Centralize or Decentralize a Follow-up Study.* What are the strengths and weaknesses of each approach to collecting data?	97-100
	. . . . .	28. *Costs.* How are the costs of a follow-up study determined?	100-103
	. . . . .	29. *National Data Systems.* What are VEDS, NOICC, & SOICC?	103-108
Data Analysis and Reporting Procedures	. . . . .	30. *Organization.* How should the follow-up study report be formulated? Who will use the follow-up results?	112-115
	. . . . .	31. *Presentation.* How can the data be graphically presented in a report?	120-123
	. . . . .	32. *Interpretation.* How should data be interpreted?	125-128
	. . . . .	33. *Computer Use.* How may computer applications be used in follow-up studies?	129-130
Using Follow-up Data and Studies	. . . . .	34. *Management Information Systems (MIS).* How is follow-up related to MIS?	134-136
	. . . . .	35. *Change.* How may planned change be incorporated into follow-up studies?	136-139
	. . . . .	36. *Improvement.* How may follow-up studies be used to improve programs and services?	139-142

Adapted from: Kay A. Adams and Jerry P. Walker, Improving the Accountability of Career Education Guidelines and Checklists. (Columbus, Ohio: The Center for Vocational Education, Ohio State University, 1977) pp. 4,5.

Notes to Section 1

1. C. V. Good, ed., Dictionary of Education, 3rd ed., (New York, New York: McGraw-Hill, 1973), p. 264.

SECTION 2

A RATIONALE FOR DOING FOLLOW-UP STUDIES

SECTION TWO

A RATIONALE FOR DOING FOLLOW-UP STUDIES

The past decade and the present one have produced a host of ideas about what follow-up is, how it should be done, and what it should do. To some extent, one could say that ideas about follow-up are in flux and transition. The advent of the 1976 Education Amendments, and more specifically, the proposed National Center for Educational Statistics' Vocational Education Data System (VEDS) have greatly increased the concern over follow-up.

The importance of vocational training is becoming more fully recognized, and the need for precise and accurate "effectiveness" information is demanded by many. As tax dollars are being invested in vocational education, better evaluative methods must also be developed in order to provide for continuous program improvement on a cost-benefit and cost-effective basis. Moreover, as vocational educators are increasingly being held accountable for their actions, the need for documentation of program effectiveness becomes imperative.

Reporting the attainments of vocational education programs to the state and federal government has been required by law for many years. However vocational educators at both state and local levels are still finding it difficult to obtain and report accurately the required information. Lack of a fully developed data collection and dissemination system is one of the major limitations in reporting vocational education data.[2] The National Advisory Council further points out that there are few organized programs for the systematic follow-up of students after graduation or placement in spite of the fact that this information is vitally needed for the justification of future federal funding.

Some state and local vocational education personnel indicate that reports which they are required to submit each year regarding former vocational students have frequently been based on inadequate information. For example, a common data gathering procedure has been to mail a questionnaire to the last known address of former students, but the nonrepresentativeness, coupled with a low response rate, often 20-40 percent, has not provided

a valid basis for reporting on the entire group. Some might achieve even lower return rates; the validity of reports based on such meager response rates is legitimately suspect.

There has been a continuing concern about the lack of full and reliable information on the ways in which federal, state, and local funds are used to realize the basic purposes of federal vocational education policy. This is reflected in several provisions of the Education Amendments of 1976. Previous to the enactment of the 1976 Act, a 1974 Government Accounting Office report stated that Congress has observed repeatedly that information about vocational education is inadequate for the purpose of formulating public policy and ascertaining whether programs are working properly.[3] It is obvious that findings concerning the need for accountability and the mandate in the 1976 Act concerning evaluation for vocational education demand a formal evaluation system or study. Follow-up studies are a necessary part of any evaluation activity for both state and local vocational education agencies.

Many consider the basic purpose of follow-up studies is to provide some measure of vocational education outcome(s). Certain individuals characterize "outcome evaluation" as something determined by data collected from a follow-up questionnaire. The follow-up data is often collected using a post card, mark sense form, exit interview, or telephone survey, and is usually conducted a few months, three to six weeks, or one year after the subject's exit from a vocational education program.

Typically, students are asked standard questions about their current job situation, job title, hours employed, wages or salary, some reflections about their vocational preparation, facilities, instructors, etc. Such information is generally obtained on a "convenience sampling" basis which raises questions about the reliability and validity of the data themselves and the selection or representativeness of the respondents as a valid subset of all program completers and leavers. The more traditional "outcome evaluation" process is simply the vocational teacher having happenstance knowledge of his or her former student and reporting this information on forms, generally to comply with state and federal reporting requirements.

Occasionally, "outcome evaluation" attempts to poll the perspectives of employers concerning their relative satisfaction with their new employees who were former vocational students. Such studies are usually done on an ad hoc basis. Seldom are they linked to student-specific data and even less often are they linked to vocational program or process characteristics.

In sum, the need for and lack of evaluation data and information--particularly information focusing on outcome evaluation--have been emphasized in the Educational Amendments of 1976.

Public Law 94-482, Title II Vocational Education, Section 112 (b) states:

> "In order for the states to assist local educational agencies and other recipients of funds in operating the best possible programs of vocational education--
>
> (A) each State shall, during the five-year period of the State plan, evaluate the effectiveness of each program within the State being assisted with funds available under this Act; and the results of this evaluation shall be used to revise the State's programs, and shall be made readily available to the State advisory council; and
>
> (B) each State shall evaluate, by using data collected, wherever possible, by statistically valid sampling techniques, each such program within the State which purports to impart entry level job skills according to the extent to which program completers and leavers--
>
> (i) find employment in occupations related to their training, and
>
> (ii) are considered by their employers to be well-trained and prepared for employment, except that in no case can pursuit of additional education or training by program completers or leavers be considered negatively in these evaluations.
>
> (2) Each State, in formulating its plans to fulfill these requirements, shall annually consult with the State advisory council which shall assist the State in developing these plans, monitor the evaluations conducted by the State, and use the results of these evaluations in compiling its annual report required by Section 105."

The following checklist will help you to identify information needs.

Checklist for Identifying Areas of Follow-up Knowledge or Information Needs

Are you knowledgeable about these follow-up study related provisions in the legislation?

Yes	Somewhat	No	
____	____	____	Vocational Education Act of 1963
____	____	____	Educational Amendments of 1976

Are you knowledgeable about these current findings in the vocational education follow-up study literature?

Yes	Somewhat	No	
____	____	____	Comprehensive follow-up services of former vocational education students need to be improved and/or initiated.
____	____	____	Standardized data bases and definitions are necessary to collect reliable and accurate data.
____	____	____	Follow-up studies generally have not been used to aid program planning.
____	____	____	Many follow-up studies have been hampered by poor design, the lack of human and financial resources, and inadequate installation and operation procedures.

Follow-up and Follow-up Study Definitions

The definitions of follow-up are many and varied with respect to vocational program area, teacher, local administrator, state vocational administrator, or vocational program supervisor and their counterparts at the federal level. However, there is one common theme evident in most definitions. Good's definition of follow-up seems to capture that commonality:

> " . . . an organized plan for ascertaining the employment and educational status of graduates from vocational programs in order to establish the relationship between employment and the vocational training received."[4]

The only addition or correction which should be offered in that definition is the substitution of graduates with former vocational education students--completers, leavers, and dropouts. For the purposes of this handbook, follow-up is defined simply as the "collection of information about program completers, leavers, and dropouts." Good defines a follow-up study in the following way:

> A study made in order to achieve one or more of the following purposes:
>
> (a) to determine the effectiveness of the guidance process,
> (b) to obtain a realistic picture of what lies ahead for present students,
> (c) to help former students reappraise their educational and vocational plans,
> (d) to appraise the school's program,
> (e) to obtain ideas for improving the program,
> (f) to obtain information that the school requires to adapt its adult education program to meet more efficiently the needs of its former students and the community, and
> (g) evaluation of progress of persons in jobs or training to which they have been assigned, on the basis of certain measuring instruments and procedures.[5]

Follow-up Problems and Issues

Through a review of literature and contact with state and local vocational education agency personnel, major concerns and problem areas in planning, conducting, and using follow-up were identified. After an analysis and synthesis of those concerns and problem areas, certain topical areas were identified for the purpose of developing this Handbook. They are discussed below.

One area of concern was the lack of understanding of why follow-up studies are conducted. Often it is viewed as primarily a compliance function to meet federal reporting requirements. Certainly, compliance is a fact of life, but follow-up can also serve as a tool for improving the decision-making process with regard to vocational program development, planning, service delivery, and evaluation. The people follow-up serves most directly include the administrator, either at the state or local level, and the teacher.

Another problem focuses on communications of objectives and procedures for doing follow-up. In many cases, the person or persons responsible for conducting a follow-up study do not share information which defines the objectives and procedures with others in that agency. Even more disconcerting is the fact that individuals who serve as principles in the data collecti often fail to recognize communications as a priority.

A third problem area is the lack of clear definitions which are needed to collect reliable and valid follow-up data. A recent study undertaken to examine definitions used in conducting follow-up studies identifies issue areas of concern.[6] The following narrative highlights certain findings from this study.

There is a paucity of official definitions used to guide the collection and interpretation of follow-up data in vocational education. Concurrently, the state and local staffs (a heterogeneous mix of professionals) who are collecting and interpreting data have created, applied, and defined terms that are critical to their professional status and future.

The principal influence in the formation of definitions is the rules and regulations to federal legislation and the U. S. Office of Education, Bureau of Occupational Education. However, "completer" is the only key term of this study with which the states reported federal influence. Other terms are left to state and local sources with a low level of coordination within and across states.

The principal strategies used to communicate definitions of key terms include instructions on the data collection forms, annual or quarterly workshops, and personal contacts among state and local personnel. The methods of monitoring and evaluating the use of definitions has been with very few exceptions, nonsystematic or nonexistent.

The words of one school administrator reflect the professional rigidity and vested interest in the use of definitions, as well as the secondary attention many people associated with the process give to data collection: "I been (sic) calling this course non-vocational for twenty-five years and I'm not changing it now to serve a new reporting purpose."

A final concern is the inability or unwillingness of people to use follow-up data or information in decision making, program planning and development, and evaluation. Certainly, the repeated citations in legislation over the years, particularly since the passage of the 1963 Vocational Education Act, have encouraged vocational educators to use data and information for the above-mentioned purposes. The most common reasons, given for not using such data include lack of reliable and valid data, untimely delivery of data and information, poor dissemination strategies and procedures, and poorly developed reports.

Legislation and Its Effects on Follow-up

Although the current legislation gives impetus for conducting follow-up studies of former vocational students, previous legislation also provided for a focal point on the need for follow-up data and information. The passage of the Vocational Education Act of 1963 (P.L. 88-210) started an intensive effort to systematically conduct follow-up studies of former vocational students at both the local and state levels. With the passage of subsequent legislation, particularly the Educational Amendments of 1976 (P.L. 94-482), there was an increased need for conducting and improving follow-up studies of vocational education completers, leavers, and dropouts.

Notably, Section 112(b) mandates the need for evaluating each vocational program. This is to be done by collecting data using statistically valid sampling techniques to determine the extent to which former vocational students: (1) find employment in occupations related to their training, and (2) are considered by their employers to be well-trained and prepared for employment, except that in no case can pursuit of additional education or

training be considered negatively in these evaluations. Further, the legislative intent for having state and local education agencies engage in follow-up studies is found in the P.L. 94-482 Federal Regulations.

Section 104.402 of the Regulations states that the State Board shall, during the five-year period of the State Plan, evaluate in quantitative terms the effectiveness of each formally organized program or project supported by Federal, State, and local funds. In defining the evaluation factors, the following topics, offered in the Regulations, can be considered pertinent to data collected in a follow-up study:

- Planning and operational processes, such as:
  1. Quality and availability of instructional offerings
  2. Guidance, counseling and placement, and follow-up services
  3. Capacity and condition of facilities and equipment
- Results of student employment success as measured, for example, by:
  1. Rates of employment and unemployment
  2. Wage rates
  3. Duration of employment
  4. Employer satisfaction with performance of vocational students as compared with performance of persons who have not had vocational education
- Other results as measured by services to special populations, such as:
  1. Women
  2. Members of minority groups
  3. Handicapped persons
  4. Disadvantaged persons
  5. Persons of limited English-speaking ability

From the preceding federal legislative citations, the following purposes for follow-up studies are apparent. Certainly, a primary purpose for follow-up studies is to increase the state and local education agencies' ability to:

1. Use the resultant evaluative information to improve programs

2. Supply information to the U.S. Office of Education in reporting the status and effectiveness of vocational education to Congress

The need for follow-up data and information has been documented. In an independent national vocational education needs assessment conducted by The Center for Vocational Education, the area of providing skills, techniques, and processes for data based decision making was identified as a concern of vocational education administrators.[7]

Other state and national studies have identified the same need, and directly and indirectly, have indicated that comprehensive follow-up studies of former vocational education students need to be improved and/or initiated. A leading suggestion, offered in both state and national studies, on how to best achieve such improvements is: standardize data bases and definitions, reporting forms, and data analysis procedures.

Lee indicated that there is a serious need to improve the collection and analysis of the state and local data.[8] He adds that statistics were compiled in different ways, often from unreliable sources, and were based on different definitions in different states and even in different school districts within a state.[9] Further support is found in the National Academy of Sciences study, "Assessing Vocational Education Research and Development," which identified the following:

- A lack of rigorous follow-up and impact studies to determine the effects of vocational education programs

- Failure to use evaluation in a systematic and comprehensive program planning, policy setting and review procedures[10]

A number of vocational education follow-up systems have been developed over the years. Some systems have

operated efficiently and have produced beneficial results for vocational educators and others. However, there have been inefficient follow-up systems, and some have never gone beyond the drawing board stage. The problems have been with human resources, financial resources, poor design, and inadequate installations and operating procedures. Even though the passage of the Vocational Education Act of 1963 and its subsequent amendments as well as other human resources legislation have caused individuals and agencies to engage in the research, development, and operation of follow-up systems, there still exists a need for improvement.

A beginning point for developing a basis for this improvement is to establish the importance of follow-up. It appears that the relevance of follow-up to the vocational education process is often not fully understood or defined. One perspective which can provide a basis for defining the relevancy is by viewing follow-up as a form of action research and as a sub-system of an evaluation scheme.

Follow-up Studies: A Form of Action Research to Support Decision Making

Follow-up studies may be described as a subsystem of an evaluation scheme and one which encompasses the manifestations of action research. Corey defines action research as, "the process by which practitioners attempt to study problems scientifically in order to guide, direct, and evaluate their decisions and actions . . ."[11] Further, he states that action research is conducted to improve practices and is done by people who want to evaluate their own situation.[12] There are others who support the need to conduct this type of research. Hunt and Jefferson state that:

> Educators in the vocational areas must accept the responsibility and opportunity of initiating and carrying out basic inquiries of a practical nature at the local level. Suggestions for local research may well include testing new methods of evaluation in classes, experimenting with the number of class periods the course meets during a semester, conducting follow-up studies of former students to obtain opinions and suggestions about future directions, devising new approaches and ingredients in courses of study and so forth. In addition, these local efforts should be critically appraised, and reported through available professional literature, reports, meetings, and other media (italics mine).[13]

Viewing follow-up studies as action research and a subsystem of an evaluation scheme, Edwards Guttentag, and Snapper focus on the primary goal of these two areas: "Evaluations, we believe, exist (or perhaps only should exist) to facilitate intelligent decision making."[14]

This publication intends to portray the design, planning, conducting, and reporting of follow-up studies as a series of decisions requiring careful thought, consideration of viable alternatives, and choices based on cost-effective and cost-benefit analyses. In doing so, it attempts to assist those in charge to come to grips with past problems of follow-up and to encourage and guide those who have been unaware of or neglected the initial thrusts of the legislation and the need for improved vocational educational evaluation.

Summary

The major points raised in this section include:

Ideas about follow-up are in flux and transition. There are a host of ideas about what follow-up is, how it should be done, and what it should do.

Reporting the attainments of vocational education programs to the state and federal governments has been required by law for many years. However, vocational educators at both the state and local levels are still finding it difficult to obtain and accurately report the required information.

Concerns over accountability and effective program management have resulted in the mandate for a formal evaluation system or study (1976 Amendments). One subsystem of the vocational evaluation effort is follow-up studies.

The definitions of follow-up are many and varied. For the purposes of this Handbook, follow-up is simply defined as "the collection of information about program completers, leavers, and dropouts."

Follow-up studies are designed to determine the vocational education program's effectiveness in order to obtain ideas to improve the program.

The Vocational Education Act of 1963 started an intensive effort to systematically conduct follow-up studies of former vocational students at both the state and local levels.

The Educational Amendments of 1976 increased the need for conducting and improving follow-up studies of former vocational students at both the state and local levels.

Each state board is now required to evaluate in quantitative terms the effectiveness of each formally organized program or project supported by federal, state, or local funds during the five-year period of the state plan.

Several vocational education follow-up studies have been developed over the years. While some have produced useful information for decision makers, others have been hampered by poor design, inadequate human and financial resources, and inadequate installation and operating procedures. Thus, there still exists a need for improvement. Follow-up studies are a sub-system of the evaluation process.

Commonly cited problems with follow-up studies include:

1. Lack of understanding of purpose of doing follow-up
2. Lack of communication of objectives and procedures for doing follow-up
3. Lack of clear definitions which are extremely crucial with regard to collecting reliable and valid follow-up data
4. Inability or unwillingness of people to use follow-up data in decision making

Notes to Section 2

2. Advisory Council on Vocational Education, The Bridge Between Man and His Work, Report of the Council for the U. S. Office of Education (Washington, D.C., 1969), p. xxviii.

3. Comptroller General of the United States, What is the Role of Federal Assistance to Vocational Education (Washington, D.C., 1974) p. 32.

4. Good, Dictionary of Education, p. 246.

5. Ibid., p. 565.

6. F. L. McKinney, K. E. Gray, and M. Abrams, A Case Study of Differences in Job Placement Rates Reported by States (Columbus, Ohio: The National Center for Research in Vocational Education, The Ohio State University, 1978), p. 1-2, 7-12.

7. K. A. Adams, D. Koble, and S. Cohen, Vocational Education Program Needs in Large Cities (Columbus, Ohio: The Center for Vocational Education, The Ohio State University, 1977), pp. 33-40.

8. A. M. Lee, "Project Baseline: Historiographic Foundations for Vocational Education Statistics," Educational Researcher 6 (July-August 1977): 3-9.

9. Ibid., p. 5.

10. National Academy of Sciences. Assessing Vocational Education Research and Development, Prepared by the Committee on Vocational Education Research and Development, Assembly of Behavioral and Social Sciences (Washington, D.C., 1976), pp. 40-44.

11. S. M. Corey, Action Research to Improve School Practices (New York: Columbia University, 1953), p. 6.

12. _____. "Curriculum Development through Action Research," Educational Leadership in A. Shumsky, The Action Research Way of Learning (New York: Bureau of Publications, Teachers College, Columbia University, 1958), p. 16.

13. E. H. Hunt and R. W. Jefferson, "Developing Professionalism in Vocational Education," Business Education World (March 1967): 11-28.

14. W. Edwards, M. Guttentag, and K. Snapper, "A Decision-Theoretic Approach to Evaluation Research," Handbook of Evaluation Research Volume 1, by E. G. Struening and M. Guttentag, ed. (California: Sage Publications, 1975), p. 140.

SECTION 3

DESIGNING AND PLANNING FOLLOW-UP STUDIES

SECTION THREE

DESIGNING AND PLANNING FOLLOW-UP STUDIES

When an architect and building contractor agree to build a family home, they require a complete assessment and understanding of the environment, people, and their interrelationships. As the architect and builder must know the family needs, its financial resources, and intended use of the home, the local education agency and/or state education agency, in designing, planning, and conducting follow-up studies must be cognizant of their objectives, existing or potential resources, the best practices or procedures, and intended uses for the data and information to be collected.

This section identifies major decisions and steps required in the design and planning of a follow-up study of former vocational students. It is organized around four major concerns or issues which a follow-up study should address:

- Systematic development of follow-up study objectives. The development of inadequate follow-up study objectives can be considered one of the major obstacles in conducting successful and effective follow-up of former students.

- Techniques for the development of survey instruments used to collect information from former students and employers. Instrument development involves a series of steps which include:

  1. Determining the questions to be asked (i.e., what data will be collected).

  2. Developing sex and ethnic equitable language for the instrument.

  3. Increasing the readability of the instrument.

  4. Increasing the reliability and validity of the instrument.

5. Determining the most appropriate format for instrument.

6. Determining how to process the instrument.

- Techniques for insuring that the concerns stemming from the Family Education Rights and Privacy Act (Public Law 93-380 and amended by Section 2 of Public Law 93-568) are addressed.

- Drawing the representative sample.

Developing an Outline of Activities for Conducting a Study

By defining the specific tasks and personnel responsibilities for a follow-up study in the beginning, the chances for a successful effort are greatly increased. Developing a chart which would indicate major and minor tasks or activities and milestones in a time-phase network can be helpful. The major activities undertaken in conducting a follow-up study are presented in Figures 3-1, 3-2, 3-3, and 3-4. These were adapted from procedures defined by McKinney and Oglesby.[15] The procedures are divided into four phases:

Phase I: Preparation

Phase II: Data Collection

Phase III: Data Analysis and Report Preparation

Phase IV: Dissemination of Follow-up Study Results

Developing Follow-up Study Objectives

The first important step in the design of follow-up studies is the development of objectives. Certainly the primary objective of compliance to satisfy federal and state reporting requirements must be considered. With the passage of Public Law 94-482, a declining resource base for a number of educational agencies, and a mandate to serve more individuals and provide more services, follow-up studies are being recognized as relevant and valuable for program planning and decision making, evaluation, and the establishment of vocational education accountability. Theoretically, accountability emanates from the overall philosophy of vocational education, and the two are extremely important reasons for developing follow-up objectives.

Figure 3-1

Follow-up Study Phase I: Preparation

1. Develop follow-up study objectives and identify audiences for which data and information are needed.

2. Identify population and/or sample of former students or employers to be included in follow-up study.

   a. Develop population or sample survey plan.
   b. Define acceptable response rate.

3. Choose best method (cost-benefit/cost-effective) for conducting follow-up study.

   a. Mail questionnaire.
   b. Personal interview.
   c. Telephone interview.

4. Design, adapt or adopt a questionnaire in consultation with input from all people involved directly or indirectly in the educational and employment process. These include, but are not limited to groups such as administrators, teachers, advisory committees, boards of education, state department of education personnel.

5. Obtain authorization for use of signatures from educational personnel and others who may be signing alert cards, cover letters, and reminder cards/letters.

6. Obtain addresses of former students and prepare master address file.

7. Obtain necessary approvals to collect information on former students in compliance with the Family Educational Rights and Privacy Act (Public Law 93-380 and amended by Section 2 of Public Law 93-568).

8. Establish mailing dates and prepare follow-up materials for mailing.

Figure 3-2

Follow-up Study Phase II: Data Collection

1. First mailing – alert cards or letters.

2. Second mailing – cover letters and questionnaires sent end of first week.

3. First response analysis:

   a. Begin running count of returned and completed questionnaires.
   b. Attempt to find correct addresses for instruments returned because of incorrect address.
   c. Compile address list for third mailing of non-respondents and corrected addresses.

4. End of second week – third mailing.

   a. Reminder cards for non-respondents.
   b. Questionnaires to corrected addresses—instruments returned with "address unknown."
   c. Prepare list for fourth mailing.

5. End of third week – fourth mailing.

   a. Reminder letter and second copy of questionnaire to non-respondents.
   b. Continue response analysis.

6. End of fourth week – fifth and final mailing.

   a. Send reminder card with cut-off date to non-respondents.
   b. Prepare telephone survey list of non-respondents.

7. Conduct telephone survey of non-respondents.

Figure 3-3

Follow-up Study Phase III:
Data Analysis and Preparation

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1. Identify data analysis processing procedures—manual and/or electronic data processing.

2. Define statistical techniques for data analysis.

3. Prepare follow-up report.

   a. Identify audiences for which report(s) are to be developed.
   b. Analyze findings.
   c. Develop non-respondent report.

4. Publish report.

Figure 3-4

Follow-up Study Phase IV:
Dissemination of Results

1. Identify groups to receive report:

   a. Administrators
   b. Teachers
   c. Advisory committees
   d. Board(s) of education
   e. Government agencies

2. Develop evaluation form to be included with distribution of report to assess usefulness, timeliness, readability, etc.

3. Develop conference or workshop package to present findings at key meetings to achieve optimum impact.

   a. Local inservice workshops.
   b. Annual statewide conference on vocational education.
   c. Public hearings or meetings.

4. Develop news article for media.

Accountability means many things to many people; it is open to numerous interpretations. For example, some individuals believe accountability means providing students with marketable knowledge and skills for jobs related to fields of training. Others believe accountability exists if vocational education provides knowledge and skills for improved career decision making, either for entry into the labor market or continuing education. Accountability is a term which education in general and vocational education in particular has yet to define in precise and commonly agreed upon terms. Obviously, the philosophy of vocational education should assist the definition of accountability. However, like the word accountability, the philosophy of vocational education is equally beset with definitional problems.

The identification of an overall philosophy of vocational education and its corresponding goals, objectives, and outcomes is a difficult task. There seems to be little agreement among educators and especially some vocational educators. However, a point of departure appears in the vocational education legislation. The Educational Amendments of 1976 and the regulations for vocational education provide a basis for an overall philosophy. Specifically, Section 104.2 of those regulations states that:

> " . . . the 'Declaration of Purpose' is to assist States in improving the use of all resources available to the States for vocational education and manpower training by involving a wide range of agencies and individuals concerned with education and training within the State in the development of the vocational education plans."

This part also authorized federal grants to states to assist them:

1. To extend, improve, and where necessary, maintain existing programs of vocational education.
2. To develop new programs of vocational education.
3. To develop and carry out such programs of vocational education within each state so as to overcome sex discrimination and sex stereotyping in vocational education programs (including programs of home making and thereby furnish equal education opportunities in vocational education to persons of both sexes), and

4. To provide part-time employment for youths who need the earnings from such employment to continue their vocational training on a full-time basis, so that persons of all ages in all communities of the state, those in high school, those who have completed or discontinued their formal education and are preparing to enter the labor market, but need to upgrade their skills or learn new ones, those with special educational handicaps, and those in postsecondary schools, will have ready access to vocational training or retraining which is of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment, and which is suited to their needs, interests and ability to benefit from such training.[16]

A major goal contained in this declaration of purpose is to provide vocational follow-up data and information that can assist individuals in making decisions concerning the development and improvement of vocational education programs. Evolving from this major goal are three broadly defined objectives:

1. Improvement, expansion, or elimination of vocational education programs

2. Assistance in planning

3. Assistance in evaluation and accountability

From the delineation of the three broadly defined objectives, specific or "question oriented" objectives are developed. Specific objectives which a number of follow-up studies have addressed include:

- Define the extent to which the former vocational students have used their previous vocational training.

- Identify types of employment experiences which former vocational students have had in a labor market(s), either locally, regionally, or in another state.

- Determine occupational and geographic mobility patterns of former vocational education students.

- Identify reasons for former vocational students leaving before completing a program of studies.

- o Identify on-the-job difficulties which former students have experienced.
- o Determine the adequacy of training from the perceptions of former students.
- o Obtain information on the extent of participation in postsecondary or continuing education training opportunities by the former students.
- o Define ways in which programs can be of additional assistance to the former students towards improving the transition from school to work.

Other exemplary objectives (related in part to the above mentioned) which can assist in defining specific questions to be used in developing a follow-up instrument include:

- o Provide job placement and job competency information indicating needed curriculum modifications.
- o Provide job satisfaction indices and job skill information useful in evaluating vocational education instructional methods and procedures.
- o Provide descriptive information about various jobs useful in guiding students into a training program compatible with their interests and abilities.
- o Provide job training information which suggests instructional staff retraining, expansion, or reassignment.
- o Provide information about skill training requiring new or additional equipment and facilities.
- o Provide information needed to determine the cost-benefit of the vocational education program.
- o Provide information used to evaluate the effectiveness of the vocational guidance program and to measure the demand for a special needs program.[17]

More specific program objectives emanate from broadly based goals and objectives. If objectives are stated in performance terms, they can be the basis for stating criterion questions and consequently questions to be included in the follow-up questionnaires. Consider for example, the following outline of the process in which follow-up questions are derived from the 1976 Vocational

Education Federal Regulations. Specifically, the regulations provided for the authorization of federal grants to states to assist them in addressing a number of broadly defined objectives, one of which was: "To extend, improve, and where necessary, maintain existing programs of vocational education." From this broadly defined objective a program objective can be derived, criterion questions developed, and items for follow-up questionnaires developed. The objectives checklist presents three broadly defined objectives to consider in planning the follow-up study.

Checklist for Defining the Follow-up Study Objectives

What is (are) the broad objective(s) of your follow-up study?

		Rank Order of Importance
1.	Improvement, expansion or elimination of vocational education programs.	_____
2.	Assistance in planning.	_____
3.	Assistance in evaluation and accountability.	_____
4.	Other: _____	_____

McKinney and Oglesby[18] and Hamilton, et al.[19] offer a systematic approach for developing follow-up questions as previously described. Figure 3-5 illustrates the sequence for developing specific follow-up questions.

Figure 3-5

A Systematic Process for Developing a Follow-up Questionnaire

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Program Objective:

To provide students with an educational program which will result in their entering a career that is satisfactory to them.

A Criterion Question:

How do former vocational students rate their education program in preparing them for an occupation?

Items for the Questionnaire:

1. Considering your occupational experiences since leaving school, how do you rate the preparation you received in school for your career?

   Superior preparation _____
   Good preparation _____
   Average preparation _____
   Poor preparation _____
   No preparation _____

2. How satisfied are you with your current job?

   I am very satisfied. _____
   I am satisfied. _____
   I am dissatisfied. _____
   I am very dissatisfied. _____

Developing Survey Instruments for Former Vocational Students and Their Employers

What are the relevant questions that should be asked of former students and their employers? As discussed in the preceding subsection, one must review the follow-up study objectives. These objectives should reflect the intent of federal legislation, the goals of the state plan, and the goals and objectives of the local education agency. From the review of those goals and objectives, categories of data or information can be identified. The most frequently used data categories include: employment data, evaluative data of training and related services--both the survey of the employer and former student are equally important, continuing education plans or experiences since leaving school, and job satisfaction. Figure 3-6 offers a worksheet that will aid in systematically relating the goals or objectives to the data or information and questions to be asked.

Former Student Survey. Eninger identified three broad data categories used for the purpose of developing questions for gathering information on former vocational students: (1) occupational history since graduation, (2) educational history since graduation, and (3) present interests, activities and affiliations.[20]

First, Eninger suggests that occupational history can be addressed with questions focusing on ten items:

- General job placement: How soon after graduation was the graduate employed?
- Related job placement: How quickly did he/she find employment in a field related to his/her training?
- Employment security: How much of his/her post-graduation employable time has he/she spent in full-time employment?
- Job stability: How many different employers has he/she worked for during his/her employment period?
- Job satisfaction: How satisfied has he/she been with the jobs held during his/her employment period?

Figure 3-6

Follow-up Data/Questionnaire Worksheet

List Program Objective

To provide students with a vocational program which will prepare them for a career that is satisfactory to them.

Identify Data Types

- Employment data
- Student evaluative data of training
- Student continuing education plan

Questions

What is the title of your current job?

How well do you feel you were prepared for this job?

Is your current educational program of studies related to your previous educational training?

- Job relatedness: To what extent have the jobs he/she has held been related to his/her high school vocational training?
- Initial earnings: What were her/his initial earnings on the first full-time job?
- Present earnings: What are his/her present earnings?
- Earnings progression: How have his/her earnings increased over the total employment period?
- Job mobility: How often and how far had he/she moved to improve employment status?[21]

Eninger's second category is concerned with post-graduation educational history. Those questions pertaining to educational history data and information focus on the amount of postsecondary education or training the former student has acquired. Also, questions can be asked pertaining to future plans for continuing education or certain training experiences, and the reasons or purposes for which the education or training is being obtained.

The third section on interests and activities requires questions which ask the former vocational student about her/his conversational interest, leisure-time activities, organizational affiliations, and attitudes toward school.[23] The identification of attitudes could focus on such services as guidance and counseling, and job placement, (which may or may not have been provided) and the adequacy of the vocational program and curriculum of the local education agency.

Employer Survey. The basic principles for preparing the questionnaire for the follow-up of former vocational students which have been described also apply to the follow-up of employers.

The common data collection procedures for obtaining follow-up information on former students from the employer are listed below:

1. Employer responds to a mail questionnaire. The questionnaire includes a list of questions or a request for a summary statement about the former vocational students as employees.

2. Employer responds to a mail questionnaire concerning an individual employee who has had vocational education training.

Questions which are commonly asked of employers include:

- How many persons do you employ and how many are former vocational students?
- What jobs do former vocational students enter in your company?
- How satisfied are you with the performance of vocational program graduates?
- What are the particularly strong and/or weak areas in the former vocational students' training?
- How do you compare former vocational education students with nonvocational students on job entry skills and job or occupational mobility?
- What method or job placement service was used to employ the former vocational students? Were you satisfied with this service?
- Do you have a working relationship with the school placement service or individual school personnel? Has this been satisfactory? What are strong points and/or weak points of the placement service effort?

It is recommended that the data from employers be analyzed by individual program areas and on an individual student basis. Also, the data should be reviewed and compared with the individual student follow-up data. An example of an employer follow-up questionnaire is found in Appendix A.

Commonly Accepted Rules for Constructing the Questionnaire. There are certain basic rules to adhere to when constructing a follow-up questionnaire. The success or failure of the follow-up study may be largely determined by adherence to these rules. Ebel suggests the following rules when designing a follow-up questionnaire.

1. Express each item clearly.
2. Choose words that have precise meanings.
3. Avoid complex or awkward work arrangements.

4. Include all qualifications needed to provide a reasonable basis for response selection.

5. Avoid the inclusion of nonfunctional words in the term.

6. Avoid unessential specificity in the question or in the response.

7. Avoid the inclusion of trivial questions.

8. Make the suggested answers simple.

9. Be sure the items will be seen by the respondents as applying to a concrete situation.

10. Refrain from asking questions of opinion unless opinion is what is specifically required.

11. Avoid items that are too suggestive or too unstimulating. They should not lead a respondent to go beyond the facts, but they should induce her or him to provide the required information.

12. Phrase questions to avoid the academically or socially acceptable responses. Make it possible for the respondent to answer truthfully without embarrassment.

13. Avoid questions that may be checked with several responses when only one response is desired. In fact, such items usually are quite difficult to tabulate and analyze.

14. Whenever possible, questions should be worded so that they can be answered simply by a check mark.

15. Ask questions in such a way that they will relieve the respondent of as much complex thinking as possible. A popular technique is to reduce a complex question to a series of questions which are easier to answer.

16. Avoid the use of words which are susceptible to different interpretations, e.g., moral or immoral, good or bad, rich or poor, intelligent or ignorant, laborer or capitalist.[24]

Format Considerations. Data processing is a primary consideration in developing a suitable format for a follow-up questionnaire. Whether processing data manually or by means of electronic data processing equipment, certain time and cost efficiency factors must be considered.

Now that computers are available to many state and local education agencies, serious attention should be given to developing a format capable of being processed by some electronic data processing device. Appendix A contains two instruments which reflect data processing considerations.

The type of questions asked and structure of the questions will act to restrict coding and analysis procedures. Open-ended questions are much more difficult to process with electronic data processing equipment then are the forced-choice questions. For example, a typical forced-choice question found in a follow-up questionnaire would be:

How does your present job relate to your training received at the area vocational school?

1. Highly related
2. Somewhat related
3. Unrelated

An example of an open-ended question commonly asked in a follow-up of former vocational students, and one which would create problems should the form be processed using electronic data processing equipment follows:

Describe your specific job duties. _____

_____

_____

_____

It is extremely important to work with a computer systems analyst or person in charge of data processing to review the questions and data needs in order to design a questionnaire which is both cost-effective and one which results in the benefits desired.

For examples and a description of exemplary instruments for surveying former students and their employers currently in use or available for use in selected state vocational education agencies, secondary, and postsecondary schools, see Vocational Education Measures: Instruments to Survey Former Students and Their Employers (K. E. Gray, M. Abram, F. L. McKinney, 1978). The four types of instruments selected for the Vocational Education Measures handbook are:

1. Job Satisfaction. Instruments which have items that are purported to measure employees' perceptions of their satisfaction with components of this job (e.g., pay promotions, supervision, coworkers, and work); and instruments in which the sum of the scores across components yields an overall job satisfaction measure (instruments which only have questions to measure overall job satisfaction were not included).

2. Job Performance. Instruments which have items that are purported to measure employees' performance in the various dimensions/components of employment (e.g., knowledge, skills, attitudes, and work attendance) as perceived by the employer. (Instruments which only have questions to measure overall employee performance were not included.)

3. Former Students' Perceptions of Training. Instruments which have items that are purported to measure former students' perceptions of the adequacy of components of their training program (e.g., facilities and equipment, competencies acquired, and placement services). (Instruments which only have questions on the overall adequacy of the training programs were not included.)

4. Employers' Perceptions of Training. Instruments which have items that are purported to measure the effectiveness of components of employees' preparation and training for employment (e.g., knowledge and skill areas) as perceived by an employer of persons who recently completed a job training program. (Instruments which only have questions to measure overall adequacy of preparation and training programs were not included.)

Context and Appearance of the Questionnaire

A questionnaire must be visually pleasing and simple in content. Questions should need no clarification; that is, respondents should not have to ponder over the response being requested. Many suggest that the first series of questions are extremely important in gaining rapport with the respondent. It is important to achieve a favorable attitude on the part of the respondent toward the follow-up study. Questions which are easiest to answer should be placed near the beginning. Those requiring long-term recall or those of a personal and evaluative nature should be placed at the end. Favorable attitudes may be enhanced

by developing a sequence of questions that conform as nearly as possible to the respondent's way of thinking. Additional suggestions for developing rapport with a respondent include:

- Arranging ideas in a questionnaire according to a logical sequence.
- Developing the first question to motivate the respondent to participate.

Travers suggested that early questions in a series be constructed so the accuracy of subsequent responses can be checked.[25] For example, if you are trying to collect total income information, you should ask for information on place of employment name, type of industry, job title, job duties, hourly or base pay, and hours worked per week before asking total income.

Romine suggested grouping questions which can be answered in similar fashion.[26] The reason for grouping would be to reduce the need for repetition of directions, and to present a more comprehensive and unitary picture of the whole purpose of the follow-up. It is highly recommended that divisions be developed within the questionnaire. Specific sections, such as employment information, continuing education experiences, job satisfaction, education or training assessment, etc., could be used.

The graphic appearance of the instrument is very important. Research has shown that the response rate of a questionnaire which is mimeographed on white paper will be lower than the response rate of one which is printed on green paper.[27]

Many educational researchers agree that more returns will be received when questionnaire forms are effectively presented and easy to read and complete. Suggestions include:

- Use high quality paper.
- Use colored paper or colored ink to improve visual appearance of the questionnaire.
- Print the form rather than mimeograph it.[28]

However, there are individuals who agree that the questionnaire must be attractive, but believe there is little need for having the questionnaire printed; unless spacing problems are better met by printing.[29] A very basic, but extremely important, rule to follow in designing

the questionnaire is to allow adequate space for answers, particularly for open-ended responses. Failure to do so discourages respondents from answering, reduces the opportunity for developing the rapport wanted with the respondent, and makes interpretation of responses difficult.

Some individuals have used personalizing techniques, such as handwritten letters or follow-up forms included with a birthday card or Christmas card, which have the effect of increasing the number of responses. However, there is some evidence to indicate that personalizing the follow-up with handwritten techniques produces only slight gains in the number of responses to a follow-up questionnaire.[30]

General requirements in the design and printing of the questionnaire include:

- Title of the study should be displayed near the top of the first page of the questionnaire.
- Name of the sponsoring agency should be centered at the top of the first page of the questionnaire.
- Space for the respondent's name and title should be provided. Particular emphasis is recommended for including a questionnaire title on an employer follow-up form.
- Mailing data of the questionnaire should appear on page one.
- Name, title, and complete address of person to whom the form should be returned should be included on the first page, if possible, otherwise it should be entered as the last item on the form.[31]

Another suggestion in regard to the graphic design of the questionnaire is the use of a pre-numbering scheme for forms. Use of numbered questionnaires was recommended for two reasons: (1) if the respondent fails to write his/her name on the questionnaire, an accurate record of the returned questionnaire is maintained, and (2) numbered questionnaires are useful in tabulation of information: instead of using tally marks, the code number can be used, thus giving identity to individuals without looking at individual reports.[32]

It is recommended that all questionnaires include a brief statement of the purpose of the study in an accompanying letter. This letter should be endorsed by a person whom the respondents know and respect. Questionnaires and accompanying letters which possess the above requirements are found in Appendices B through E.

Examples of critical factors for developing a follow-up questionnaire are listed in the checklist that follows.

Checklist for Identifying Critical Factors in Developing the Follow-up Questionnaire

Do the following statements apply to your follow-up questionnaire?

Yes	No	Content
___	___	1. The first series of questions gain rapport with the respondent.
___	___	2. Ideas are sequenced according to the logic of the respondent.
___	___	3. Early questions in a series are constructed so that the accuracy of subsequent responses can be checked.
___	___	4. Questions that may be answered in a similar fashion are grouped together.
		Appearance
___	___	5. The questionnaire is reproduced on high quality paper.
___	___	6. Colored paper or colored ink is used to improve the questionnaire's visual appearance.
___	___	7. The questionnaire is printed rather than mimeographed.
		Format
___	___	8. The title of the study is displayed near the top of the first page.
___	___	9. The name of the sponsoring agency is centered at the top of the first page.
___	___	10. Name, title, and complete address of person to whom the form should be returned is included on the first page.
___	___	11. Space is provided for the respondent's name and title.
___	___	12. Questionnaires are pre-numbered.
___	___	13. The purpose of the study is included in an accompanying letter.

Sex and Ethnic Stereotyping Considerations for Follow-up Studies

Vocational educators must be concerned with the need for eliminating sex and ethnic stereotyping so that all individuals can pursue training in those careers which they desire. Therefore, it is important that curriculum material, classroom discussion, written documents and correspondence, and test and measurement devices be free of such stereotyping. This section of the Handbook draws upon accepted guidelines which have been designed to assist in the elimination of sex and ethnic stereotyping in the designing and planning of follow-up studies.

Practical Guidelines for Reducing Stereotyping. When constructing questionnaires to be used in a mail survey or ones to be used in an interview, steps should be taken to avoid sex and ethnic stereotyping. Certain guidelines and practices can be helpful. A major portion of the following information has been paraphrased from a publication of the National Advisory Council on Women's Programs.[33] These guidelines are intended as a learning tool to assist you in reducing sex and ethnic stereotyping. The following statements should be considered:

- Use language that encompasses both sexes: she/he, her/his; nongender referents, such as you, they, individuals, person; restrict use of personal pronouns by substituting with articles such as a, an, the.

- Interchange the use of men and women, he and she with women and men, she and he.

- Use neutral terms in identifying occupations or describing labor market factors. Examples include: fire fighter for fireman, human resources for manpower, businessperson for businessman, etc.

- In developing questionnaire items, use names that are different from a white, middle-class orientation. Names common in some ethnic groups include: Mohammed, Pedro, Shoshauna, Bogdan, Seon, Yetta, etc.

- Use items or questions that represent a variety of life styles, socioeconomic levels, handicaps, etc.

- Consider language, both oral and written, which depicts males and females in nontraditional occupational roles.

Stereotypical vocational role expectations for those of certain ethnic origins and sexes have become a major concern of our society. The individual(s) responsible for follow-up studies must be sensitive to these societal concerns. By using language which is attentive to reducing sex and ethnic stereotyping, vocational educators are broadening the awareness of the world of work for all concerned.

For more detailed information, the following documents are recommended for assistance in addressing the stereotyping concerns:

- Sexism and Language. (Nilsen, et al, 1977)
- Guidelines to Insure Sex Fairness in Education Division Communications and Products. (Women on Words and Images, Inc., 1978)
- Job Title Revisions to Eliminate Sex and Age Referent Language from the Dictionary of Occupational Titles. (U. S. Department of Labor, 1975)
- Guidelines for Creating Positive Sexual and Racial Images in Educational Materials. (Roberts, Nancy, 1975)
- Racism in American Education: A Model for Change. (Sedlacek, William E. and Glenwood C. Brooks, 1976)
- Sugar and Spice is not the Answer: A Parent Handbook on the Career Implications of Sex Stereotyping (Vetter, L.; C. M. Lowry; C. Burkhardt, 1977)
- Guidelines for Sex-Fair Vocational Education Materials. (U. S. Office of Education, Bureau of Occupational and Adult Education, 1978)

Major considerations are identified in the following checklist for defining sex and ethnic stereotyping language in the follow-up questionnaire.

Checklist for Defining Sex and Ethnic Stereotyping Language in the Questionnaire

Does your follow-up instrument eliminate sex and ethnic stereotyping by following these guidelines?

Yes	No		
____	____	1.	Interchanging the use of men and women, he and she with women and men, she and he.
____	____	2.	Using neutral terms in identifying occupations or describing labor markets.
____	____	3.	Using names that are different from a white, middle-class orientation.
____	____	4.	Using items that represent a variety of life styles, socioeconomic levels, handicaps, etc.
____	____	5.	Using language which depicts males and females in nontraditional occupational roles.

Developing Follow-up Questions for Vocational Education Programs

A commonly used questionnaire for follow-up of former vocational students adopted by most state and local education agencies consists of general status questions. These questions have been categorized as:

1. Personel information - includes information on sex, ethnic background, age, etc.

2. Employment information - defines whether the individual is employed or unemployed, and for what period of time.

3. Job information - includes information on place of employment, job title, job duties, wage or salary.

4. Curriculum information - defines whether courses taken in school supported or assisted the individual in doing her/his job.

5. School and community services information - identifies who assisted and what assistance was provided the individual in finding employment.

6. Continuing education - answers questions, such as: Did the individual continue her/his schooling? If so, in what area? Was it related or unrelated to previous training?

Information obtained by asking questions which relate to those categories is viewed by many local educators as information which lacks the necessary detail to meet their individual program needs. Often, individual teachers have conducted their own follow-up studies of their program graduates to obtain what they consider to be their real data needs. Recognizing that each local educator may need additional and/or different information from her/his former students, a number of statewide centralized follow-up systems have provided options whereby the local education agency and an individual program area teacher may add questions to a follow-up form to obtain needed detailed information. Some state systems have provided this option for local education agencies.

The individual vocational education program areas (agriculture, trade and industrial, distributive education, health occupations, occupational home economics, consumer and homemaking, office occupations, and technical) with their corresponding program objectives and competency-based objectives, can translate into specific program area questions for the follow-up form. The procedures as outlined in Section 3 provide those basic steps. Another consideration would be to define the questions around outcome categories.

In formulating individual program questions it might be helpful to consider the individual student and program outcomes. These outcomes can be defined as immediate student outcomes, long-term student outcomes, and intended program outcomes. Definitions for these outcomes follow:*

- o Immédiate student outcomes: Questions about changes in student's knowledge, skills, attitudes, or behaviors resulting from an individual program area experience (e.g., defines skills needed to do the job, positive attitude about work, etc.).

- o Long-term student outcomes: Questions about the impact of a program area on the students' career development after leaving school (e.g., job satisfaction, mobility, etc.).

- o Intended program outcomes: These are questions about changes the program is designed to bring about that are broader than individual student outcomes (e.g., increased community involvement, increased understanding of work ethic, awareness of stereotyping by sex and ethnic role, etc.).

A list of hypothesized vocational education outcome statements are offered in Figure 3-7 to provide a basis for formulating follow-up questions.

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*Adapted from: K. A. Adams, and J. Walker, 1977. Improving the Accountability of Career Education Programs: Evaluation Guidelines and Checklist, Draft Copy, (Columbus, Ohio: The Center for Vocational Education, The Ohio State University), p. 37.

Figure 3-7

Hypothesized Vocational Education Outcome Statements

High school seniors enrolled in vocational programs are more satisfied with their school experience than are comparable students taking academic/general courses.

Employers rate vocational students more satisfactory as employees than comparable academic/general students after six months on the job.

Within six months of program completion, students obtained jobs related to their occupational training.

High school dropout rates are lower for vocational students than for comparable students enrolled in academic/general curricula.

Two years after program completion, vocational students were more satisfied with their jobs than were graduates of academic/general programs holding similar jobs.

Parents of high school seniors enrolled in vocational programs are more satisfied with the curriculum than are parents of comparable students enrolled in academic/general programs.

Within six months of program completion, students obtained satisfactory jobs, though not necessarily in the area of their occupational training.

Upon completion of a vocational program, students were certified as occupationally proficient and ready for entry-level employment.

Private sector employers rate high school vocational programs in their communities higher than academic/general programs.

One year after program completion, vocational students were earning higher hourly wages than comparable academic/general students holding similar jobs.

Source: Robert L. Darcy, Kathleen A. Bolland, and Joanne Farley, Vocational Education Outcomes, Final Report on Year One of the R & D Project "Examining Vocational Education Outcomes and Their Correlates," (Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1979).

Improving the Readability of a Follow-up Instrument

Good defines readability as "the quality of a piece of reading matter that makes it interesting and understandable to those for whom it is written, at whatever level of educational experience."[34]

Analysis of Good's definition is necessary. It is assumed that the content of a follow-up instrument fulfills the definition's criterion of " . . . a piece of reading matter." It is also assumed that in order to achieve acceptable response rates (a necessary prerequisite to fulfilling follow-up study objectives) the instrument must be "interesting"; however, the Good definition does not assume that the reader will have the same response to a readable evaluation instrument that he/she would have to more casual reading, i.e., comics or a weekly magazine. Specific attempts to make the follow-up instrument "interesting" are dealt with in other sections of this Handbook. This section deals mainly with making the follow-up instrument " . . . understandable to those for whom it is written, at whatever level of educational experience."

There are a variety of factors which help determine whether or not reading matter is understandable or not. Some of these factors--interest and intelligence, for example--are internal human factors that the designer of the follow-up instrument cannot address. Other factors--word or sentence length, for example--are important considerations for the instrument designer. In order to determine if reading matter is understandable to the reader, it is essential to determine the difficulty of the material. Once the difficulty of the instrument has been determined and compared to the educational level of the targeted audience, changes and modifications, if needed, can be made in the instrument.

Two general methods of determining the difficulty of written materials such as a follow-up instrument are: (1) informal, and (2) formal. The informal method of determining the difficulty of written materials is easier but yields subjective, less reliable data. The more formal method utilizes tested readability formulae to assess written materials and obtain the approximate grade level score for the materials. Each of these two methods will be discussed in the following subsections. One point worth remembering is that <u>all</u> follow-up instrument designers should conduct both formal and informal procedures. The additional expense of performing both procedures is minimal; with the major trade-off being increased development time.

Informal Technique (Pilot Test). The informal technique for determining the difficulty of a follow-up instrument is conducting a pilot test. A group of students representative of the target audience can be located or "recruited" to complete the first draft of an instrument. Sons, daughters, nephews, nieces, or neighbors who are or were vocational students may be easy to recruit for such a pilot test. However, the instrument designer needs to be cognizant of the representativeness of members of the group. For example, if a follow-up instrument's target audience includes early leavers and drop-outs from a vocational program, it is imperative that the instrument designer locate such students to help pilot test the draft instrument.

Two common procedures are used to pilot test the first draft of a vocational follow-up instrument. The first, and easier, procedure is to distribute the instrument to members of the pilot test group with instructions to make notes, comments, and remarks on any content, clarity or reading problems they may encounter while completing the instrument at their leisure. The second, and more difficult procedure is to interview members of the pilot test group after they have completed the instrument. A designated individual should keep notes during the interview process so as to record words, sections, questions, and other items in the follow-up instrument that should be revised.

By utilizing the first procedure, the designer minimizes possible peer pressures on items of concern and probably obtains divergent points of view. Utilizing the second tactic, however, allows for discussion of disputed points or items and may lead to an improvement at that time. A third--combination--procedure may be employed. Here the designer may hand carry or mail the draft instrument and obtain the responses through the use of a follow-up telephone call. This procedure will save some time for the instrument designer. Whichever procedure is used, respondents should be asked to record the exact amount of time required to complete the instrument: these data are needed by the follow-up instrument developer.

There are several important reasons for subjecting all follow-up instruments to the informal (i.e., pilot test) technique for determining the difficulty of written material. One reason is that the pilot test of a draft instrument yields crucial respondent data that help identify areas that the follow-up instrument designer should improve. The pilot test data reveal: (1) length of time required to complete the instrument, (2) reactions to the response mode(s), (3) clarity of the directions, (4) possible misinterpretations of words with multiple meanings, and (5) jargon or slang terms that created problems for respondents.

Another reason for pilot testing all draft versions of follow-up instruments is to judge the difficulty of written materials that readability formulae do not consider. Some subtle factors not considered by readability formulae include the complexity of the concepts, the level of abstraction, the writer's style, the syntax of the passage, and the grammar involved. Other less subtle factors not considered by readability formulae include the kind of paper, the color of the paper, the type of print, the size of the print, and even the color of the ink used in printing.

Formal Technique (Readability Formula). Use of a readability formula yields an approximate grade level score for the written materials analyzed. The important advantage of using readability formulae is that they have been developed through research and, thus, yield more reliable data than informal pilot test techniques.

Most current readability formulae consider two characteristics of written materials. First, they assess the difficulty of words printed in the sections of the written materials under study. This is important because the more unusual or long words the section contains, the more difficult that section is likely to be. Second, readability formulae determine sentence length in the section under scrutiny. This characteristic is important because the longer and more complex the sentences in a section are, the more difficult the selection is likely to be. Readability formulae manipulate various aspects of word difficulty and sentence length characteristics to arrive at their approximate grade level scores.

There are four popular readability formulae applicable to follow-up instrument use. The Fry readability formula uses the criteria of syllables per 100 words and sentences per 100 words in determining its grade level score.[35] The Flesch readability formula utilizes the criteria of words per sentence and syllable per 100 words.[36] The Dale-Chall formula employs average sentence length and the percent of unfamiliar words as its critical criteria.[37] The SMOG formula involves word length and number of polysyllabic words as its criteria.[38] All formulae are accurate within one grade level for their scores. Each of these formulae is explained in detail in references listed in the end notes of this section.

Readability formulae typically instruct the user to select one or more 100-word passages in which to derive necessary components. For use with a follow-up instrument, these 100-word passages will probably need to be secured by

grouping and clustering the instrument's sequential questions and responses. However, the approximate grade level designation obtained for any one particular 100-word passage may not be representative of the entire follow-up instrument. Thus, the designer should take a number of 100-word selections throughout the instrument in order to determine the reading difficulty of the whole instrument.

A hypothetical application of the Fry readability formula to a vocational follow-up instrument is presented below. The user is instructed to pick a minimum of three 100-word selections from the written materials and count the number of sentences per 100 words and the number of syllables per 100 words. Suppose the results of this step were:

Figure 3-8

Application of the Fry Readability Formula

Passage No.	No. of Sentences Per 100 Words	No. of Syllables Per 100 Words
1	8.5	188
2	6.6	155
3	4.8	149
	19.9	492

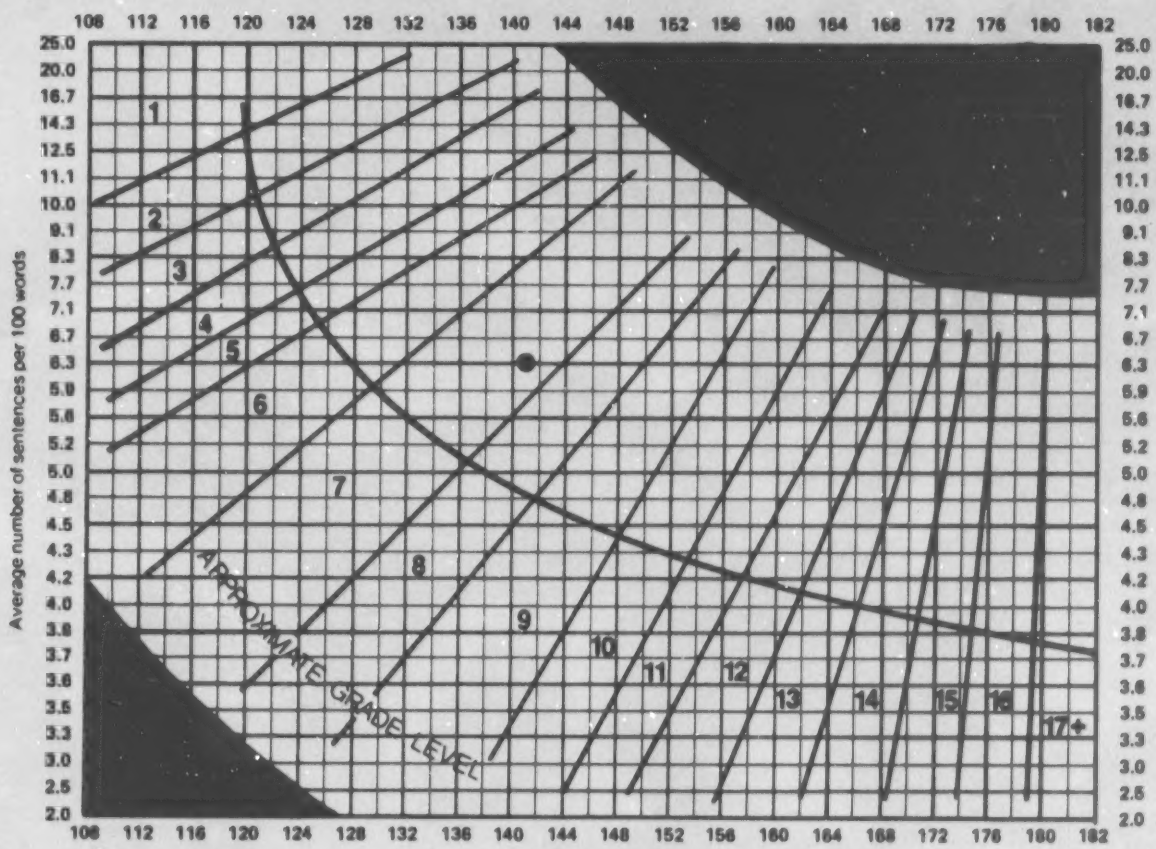
The next step is to compute the average for each column:

$$\frac{19.9}{3} = 6.6 \qquad \frac{492}{3} = 164$$

The last step is to plot these figures on the graph developed by Fry and observe the result (See Figure 3.9). In this case the result is 11, meaning that the approximate grade level for the three selections analyzed is the eleventh grade. This instrument would be suitable for most graduates and leavers of two-year secondary vocational programs (assuming they were reading at grade level).

Figure 3-9
Graph for Estimating Readability

Average number of syllables per 100 words.



DIRECTIONS Randomly select 3 one hundred word passages from a book or an article Plot average number of syllables and average number of sentences per 100 words on graph to determine the grade level of the material Choose more passages per book if great variability is observed and conclude that the book has uneven readability Few books will fall in gray area but when they do grade level scores are invalid

Count proper nouns, numerals and initializations as words Count a syllable for each symbol For example, 1945 is 1 word and 4 syllables and IRA is 1 word and 3 syllables

EXAMPLE

	SYLLABLES	SENTENCES
1st Hundred Words	124	6 6
2nd Hundred Words	141	5 5
3rd Hundred Words	158	6 8
AVERAGE	141	6 3

READABILITY 7th GRADE (see dot plotted on graph)

REPRODUCTION PERMITTED NO COPYRIGHT

Source: Edward Fry, Rutgers University Reading Center, New Brunswick, New Jersey 08904

For further information and validity data see Journal of Reading, December 1977.

Figure 3-10

Expanded Directions for Working Readability Graph

1. Randomly select three (3) sample passages and count out exactly 100 words beginning with the beginning of a sentence. Do count proper nouns, initializations, and numerals.

2. Count the number of sentences in the hundred words estimating length of the fraction of the last sentence to the nearest 1/10th.

3. Count the total number of syllables in the 100-word passage. If you don't have a hand counter available, an easy way is to simply put a mark above every syllable over one in each word, then when you get to the end of the passage, count the number of marks and add 100. Small calculators can also be used as counters by pushing numeral "1," then pushing the "+" sign for each word or syllable when counting.

4. Graph *average* sentence length and *average* number of syllables; plot dot where the two lines intersect. Area where dot is plotted will give you the approximate grade level.

5. If a great deal of variability is found in syllable count or sentence count, putting more samples into the average is desirable.

6. A word is defined as a group of symbols with a space on either side; thus, "Joe," "IRA," "1945," and "&" are each one word.

7. A syllable is defined as a phonetic syllable. Generally, there are as many syllables as vowel sounds. For example, "stopped" is one syllable and "wanted" is two syllables. When counting syllables for numerals and initializations, count one syllable for each symbol. For example, "1945" is 4 syllables and "IRA" is 3 syllables, and "&" is 1 syllable.

Source: Rutgers, The State University of New Jersey, Reading Center, Graduate School of Education, New Brunswick, New Jersey.

This "extended graph" does not outmode or render the earlier (1968) version inoperative or inaccurate; it is an extension.

In summary, improving the readability of a vocational follow-up instrument begins when the draft version is completed. All follow-up instruments should be pilot tested by a group of present or former vocational students representative of the instrument's target audience. Three alternative approaches to conducting the pilot test include: (1) give instructions, distribute, and collect instrument; (2) conduct interviews after instrument has been completed; or (3) distribute instrument with instructions, then conduct telephone interviews.

Next, the instrument designer may decide to apply a readability formula to the draft instrument in order to obtain its approximate grade level score. The designer should select one of the following readability formulae: (1) Fry, (2) Flesch, (3) Dale-Chall, or (4) SMOG. Based on data collected in the pilot test and the readability formula stages, the follow-up instrument designer should make any required modifications or improvements in the instrument. The revised follow-up instrument is now ready to be utilized in the data collection process.

Instrument Reliability and Validity

When conducting a follow-up study, you must be concerned with the quality of data. And it is through the use of certain procedures in sampling, data collection, and analysis that you can increase the probability of obtaining reliable and valid data.

First, what do reliability and validity actually mean? Reliability is defined as referring to consistency, to obtaining the same results again.[39] Oppenheim states that validity tells us whether the question or item really measures what it is supposed to measure.[40]

Measurement Problems. One should be aware of the many measurement problems in follow-up surveys. Phillips states that the major problem in evaluating the results of any measurement procedure is that of determining what shall be considered as true differences in whatever it is the individual is attempting to measure and what shall be considered as variation due to errors in measurement.[41] Further, a list of several possible sources of differences among individuals on various measures can include:

- True differences in the characteristics which one is attempting to measure

- True differences in other relatively stable characteristics of the individual which affect her or his score
- Differences due to transient personal factors
- Differences arising from situational factors
- Differences because of variations in administration
- Differences due to sampling of items
- Differences resulting from an instrument's lack of clarity
- Differences due to mechanical factors
- Differences arising from factors in the analysis of the data.[42]

Although no measurement is entirely free of error, it should be the goal of all those responsible for conducting the follow-up study and administering the survey instrument to minimize errors. Errors can be classified as "constant" or "random":

- Constant (or biasing) errors are introduced into the measurement by some factor that systematically (in one direction or another) affects either that which is being measured or the process of measurement.
- Random errors, on the other hand, arise from those transient aspects of the individual, the measurement procedure, the situation of measurement, etc., that are apt to vary from one measurement to the next, even though that which is being measured has not changed.[43]

Further, Phillips states that both random and constant errors affect estimates of "validity," while reliability is usually affected only by random errors.

In examining the questions in the follow-up form, to determine reliability and validity, look primarily at the possibility of bias due to wording of questions, and at the reliability and validity problems raised by the follow-up questionnaire procedures.

Techniques for Determining the Reliability and Validity of Factual Questions. A fundamental rule to follow in establishing reliability and validity is: define a criterion--an independent measure of some variable--to which the results of the questionnaire can be compared.[45] But often, particularly in using follow-up questionnaires, such criteria are in many instances difficult to objectively define. However, this should not preclude one from making the effort to locate suitable criteria.

To establish a reliability factor in the case of factual questions, one should plan for a number of internal checks. This can be done by asking the same question in more than one way. Another form of an internal check could be an inclusion of erroneous items, which if given answers or endorsements, would suggest guessing or carelessness on the part of the respondent.

Another check is to readminister the questionnaire. But, when making this "check" be careful not to allow too much time to pass before readministering the survey; true changes in status or behavior may occur in the interval which would affect the outcome of this comparison. In a reliability study of one follow-up questionnaire, the analysis was based on the consistency of group responses which were categorized according to their rate of response: early-returners, intermediate-returners, and late-returners. The study concluded that data gathered from the student questionnaire were sufficiently reliable to be used as a source of information in decision-making concerning vocational programs.[46]

The content validity of the follow-up instruments, can be defined as the relevance of the survey items to the actual needs of students and/or outcomes of the vocational program. Therefore, content validity might be enhanced through an iterative item generation and review process that involves multiple sources of information. For example, information about needs should be sought from a variety of individuals representing vocational education teachers, directors, guidance counselors, students, employers.

Nunnally and Durham state that two major standards for ensuring content validity are: (1) a representative collection of items, and (2) "sensible" methods of test construction.[47]

To determine the validity of factual questions, certain checks may be made. One is to obtain a second, independent source of information. For example, responses on certain questions can be cross-checked with a former vocational

student, teacher, present employer, or parent. In determining the validity of follow-up responses with regard to defining a declared occupational title, Adams et al and Harris found no significant differences in the way students and teachers answer these follow-up questions.[48] Sometimes, respondents to a mail inquiry are interviewed, on the assumption that the interview is valid. In summary, a test of validity is to compare a respondent's account with what actually happens or exists.

The best way to determine if questionnaire directions and questions are clearly stated is to pretest the questionnaire in order to see if these elements are understood and can be answered. The instrument should be pretested with current students as well as former students. Students may be asked to participate in the decisions concerning type of data to be collected, type of questions to be asked, wording of the questions, and design of the instrument (including the physical appearance of the survey form). Time given to pretesting can save hours of labor by significantly improving the response rate, reducing missing data, and increasing the reliability of the instrument. Under the press of time, this step is frequently overlooked or given only minor attention.

In summary, the reliability and validity of a follow-up questionnaire can best be accomplished by submitting the questionnaire to critical experts who will attempt to "pick the questionnaire apart." Then it should be submitted to a trial use by a small number of respondents. Such an empirical trial will determine if the questionnaire needs improvements, simplifications, or revisions in presentation or arrangement; if the instructions and questions are clear; if each question is so worded as to evoke the same interpretation from all respondents; and if the interpretation is the one needed to obtain the information the questionnaire was designed to obtain.

For further information and detailed discussion on reliability and validity of questionnaires, you are encouraged to review:

- Construction of Questionnaires. (Duckworth, 1973)
- Questionnaire Design and Attitude Measurement. (Oppenheim, 1966)
- Reliability of the Minnesota Vocational Follow-up Student Questionnaire. (Pucel and Luftig, 1975)
- Parallel Follow-up. (Adams, et al., 1974)

Sampling Concepts and Procedures

Follow-up studies usually involve the gathering of information on a group of people that comprise a finite population. For example, in a follow-up study on consumer and homemaking programs, the designated population might be Care and Guidance of Children program graduates of the ABC Area Vocational School from 1971 to 1973. The optimal method for collecting information on these graduates is questioning every member of the population. Therefore, one may choose to design a sampling plan to gather information from a portion of the population, and then use these results to make inferences about the entire population. This section will describe: the purpose of sampling, the characteristics of a good sample, probability and non-probability sampling, sample size, and procedures for drawing a random sample.

Purpose of Sampling. Backstrom and Hursh define sampling as the procedure by which we can infer the characteristics of a large body of people (a population) although we talk with only a few persons (a sample).[50] Thus, in sampling, we "take" any portion of a population or universe as representative of that population or universe. This definition does not say that the sample taken--or drawn, as researchers say--is representative, but rather, it says, the portion of the population taken is considered to be representative.[51]

Sampling is used in follow-up studies and other types of educational evaluation and research endeavors for a number of reasons. Primarily, samples are drawn because in most cases it is not practical to evaluate the training received and/or post school experiences of all former students. Neither is it practical to question every person who employs a graduate of a training program. Therefore, by drawing a representative sample of the total population to query, the information desired from a follow-up study is gathered at a reduced cost, using less personnel and in a more timely fashion.

Characteristics of a Good Sample. According to Backstrom and Hursh, a good sample is based on the theory that it:

1. Provides ways to determine the number of respondents needed.

2. Specifies the chance (probability)that any person will be included in the sample.

3. Enables us to estimate how much error results from interviewing a sample of people instead of interviewing all of them.

4. Lets us determine the degree of confidence that can be placed in population estimates from the sample.[52]

However, there are two minimum requirements: (1) the sample must be adequate in size so estimates about the characteristics of the population can be made with relative precision, and (2) the sample must include people who together are representative of the population.[53] Therefore, a good sample provides the researcher with the desired information, accuracy, and at the desired price.

Sampling Procedures. Sampling procedures have been classified under various categories; we will focus on two categories here: probability and non-probability sampling.

Probability sampling is a type of sampling where the members of the population are chosen by chance, such as flipping coins, drawing numbers out of a hat, or by using a table of random numbers.[54] It is based upon the proposition that every member of the population has an equal chance of being included in the sample and there is a known probability for the selection of each member of the population to participate in the sample.

Warwick and Lininger define non-probability sampling as including all methods in which units are not selected by chance procedures or with known probabilities of selection. Therefore, every member of the population does not have an equal chance of being selected, because the aim is to include specific people or groups of people in the sample.[55]

There are several variations in probability sampling; but all share a common trait: the selection of units (or members) for the sample is carried out by chance procedures and with known probabilities of selection. Five variations are presented below:

- Simple Random Sampling exists if a sample is selected from a population in which all possible combinations of n units as formed from the population of N elementary units have the same chance of being included.[56] In other words, simple random sampling is a procedure whereby all members of the sample are chosen individually

or directly through a random process in which each member of the population has an equal chance of being selected. Thus, to draw a simple random sample, each member of the total population must be clearly identified.

There are two options in regard to simple random sampling. One is sampling with replacement and the other is sampling without replacement. Sampling with replacement is accomplished by replacing the unit into the selection pool each time it is chosen. Sampling without replacement means that the remaining units in the pool have an increasing chance of being selected since the absolute size of the pool decreases. In selecting a simple random sample for a follow-up study, a student accounting system could provide a list of all students to be used in drawing the sample.

- Cluster Sampling is a procedure whereby the selection of sample members is chosen from the total population in groups of clusters rather than individual persons.[57] The clusters selected are often natural or administrative groups of the population (e.g., intermediate units, county schools). Warwick and Lininger cite the following advantages of cluster sampling: increased convenience and reduced costs. The major disadvantage to cluster sampling is the likelihood of increased sampling error, as the size of the sample increases, the size of the standard error decreases.[58]

- Systematic Selection is a method of selecting units from a list through the application of a selection interval, I, so that every Ith unit on the list, following a random start, is included in the sample.[59] For example, if there are 1,000 former vocational students in the total labor market area and 100 are to be surveyed, the tenth student from the list is chosen to comprise the sample. The main advantage cited for systematic selection is simplicity and ease of administration.

- Stratified Sampling involves dividing the population into sub-populations or strata and then selecting a sample with each strata.[60] In general, stratified sampling is composed of the following steps: "(a) the entire population is divided into distinct sub-populations, called strata (b) within each stratum a separate sample is selected from all the sampling units, composing that stratum (c) from the sample obtained in each stratum, a separate stratum mean (or other statistic) is computed. These stratum means are properly weighted to form a combined estimate for the entire population (d) the variances are also computed separately within each stratum and then properly weighted and added into a combined estimate for the population."[61]

The major advantages of stratified sampling as defined by Parten include: (1) The researcher can be certain that all essential groups will be included in the sample. This increases the representativeness of the sample and reduces the possibility of an important variable (age, sex, religion, etc.) being excluded. (2) It reduces the number of cases required to insure representativeness. (3) It reduces the bias which arises from self-selection. Again to cite Stephen "By providing that a fixed proportion of the sample shall come from each geographic area or income class, stratification automatically brings about the replacement of persons lost to the sample by persons of the same stratum thus partly correcting the bias that would result if there were no replacement of losses. The number of questionnaires mailed to persons in strata with low rates of return can be increased to compensate for the lower rates so that the number of useable returns received from each stratum will be proportional to the size of the stratum. It may also be possible to introduce into the stratification scheme a classification that will separate effectively the kind of people for whom the loss rates are high from those for whom they are low, thereby controlling the major part of the bias due to losses."[62] (4) Stratified samples are generally more geographically concentrated which will reduce costs. The disadvantages of stratified sampling are: (1) In order to stratify, the researcher needs to have prior knowledge of the variable for which she or he intends to control. In other words, if the individual intends to stratify by vocational

program--the individual must know the vocational program distribution of the population. (2) If the researcher uses disproportionate stratification, she/he must weight his/her results. In order to accomplish this, he/she must have information regarding the relative frequency of each stratum within the population. (3) The researcher may be unable to find elements to fit her/his strata. (4) Disproportionate sampling requires weighting which increases the cost of the analysis of the data.[64]

- Unequal Probabilities of Selection (UPS) chooses sampling units by a procedure giving some elements a higher or lower chance of selection than others.[65] Therefore, the sample includes proportionally more of the oversampled cases. Warwick and Lininger offer the following advantages and disadvantages for using UPS.[66] One reason for adopting UPS was mentioned in connection with stratification. A subgroup of the population, such as a minority group or a particular vocational program area may be extremely important in meeting analysis objectives and yet very small relative to the total population. When using sampling units of widely different sizes, the UPS is preferable. A third advantage is that UPS reduces costs of sampling and/or interviewing. However, there are negative factors which include: the need to assign compensating weights to sample elements, and to apply them during analysis. Used alone, a sample drawn according to UPS procedures would give a false picture of the population. The oversampled strata or elements would carry more weight than they deserve, while the rest would be under represented. Other problems in using UPS procedures may arise from the researcher's inexperience in working with weighted data or the lack of appropriate data processing equipment. Any tabulation or calculation based on weighted data is more complicated than the same operation carried out with unweighted data. The more intricate the analysis, the greater the complexities.

- Multi-Stage Sampling is a procedure for selecting a sample in two or more successive, contingent stages.[67] Warwick and Lininger offer the following advantages and disadvantages. The major advantages of multi-stage sampling are convenience and economy. Sample preparation costs are greatly reduced by the fact that this sampling

does not require complete lists of individual elements in the population. A major disadvantage is the increased sampling error arising from the selection of sample cases in groups rather than independently. For a more detailed description of the procedures involved in doing multi-stage sampling see: The Sample Survey: Theory and Practice. "Illustration: A Multi-stage Area Sample," (Warwick and Lininger, 1975).

The non-probability sampling procedures included in this category are noted below.

- Haphazard sampling involves the selection of individual on a convenience basis. For example, all vocational students attending classes on a Monday, those students attending the first lunch period or all female students entering the main entrance of the area vocational school on Tuesday.

- Judgment sampling is the selection of a sample by an individual using their own discretion about the sample representativeness of individual sample elements.

- Quota sampling involves the selection of persons from predetermined categories to obtain a specific number individuals in each category. This selection is done by persons responsible for the data collection.[68]

Sample Size. There are no absolute standards regarding the proper size of a sample. Tables appear in the literature which can provide "guestimates" of the appropriate sample size.* However, there are some helpful hints to bear in mind when determining your sample size.

1. The more homogeneous the population, the smaller the sample can be since everyone is theoretically alike.

2. The more time, personnel and money available, the larger the sample can be.

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*See Survey Research, p. 33, (Backstrom and Hursch, 1963) and Guide to Sensible Surveys, p. 67, (Orlich, et al., 1975).

3. The more categories by which the sample data are to be generalized (e.g., age, sex, type of vocational education program), the larger the sample must be in order to insure that there are enough respondents in each group so that valid inferences may be made.

4. The surer you want to be that you reach the right decision based upon the sample information, the larger the sample you will need. In other words, the less error you can permit in accepting an estimate as accurate and useful, the larger the sample you will need.[69]

Thus, samples that are too small threaten the accuracy of the results while those that are too large waste resources. Therefore, it is imperative that the number of respondents chosen (the sample size) be sufficiently representative of the entire population. No matter what the sample size, data must be analyzed statistically to determine the confidence for generalization from the sample population.

In a comprehensive study for the U. S. Office of Education, to identify sample designs for the state follow-up of former vocational education students, a systematic sampling procedure was identified. It was proposed that the actual sampling be done centrally at the state level rather than at the individual school. This was suggested to increase the representativeness of the sample, and to reduce costs. The authors recommended sample sizes for each state and territory, sampling rates and sample sizes, based on the numbers of completions reported to the U. S. Office of Education for Fiscal Year 1975. They stated that the sampling rates and the sample sizes proposed (these are found in Table 1, page 15 of that final report) should not be regarded as absolutes, to be adopted unquestioningly by any state planning an on-going follow-up survey. They noted however, that the rate and size proposed for a specified total volume of completions represent a judgment of what may be a reasonable compromise between the conflicting considerations of cost and reliability.[70]

Drawing a Random Sample. In order to minimize bias, a random sampling procedure should be used to insure that all cases or elements of a population have an equal chance of being included in the sample.

There are techniques which can be used to draw a random sample. Two techniques often used include the lottery method and the table of random numbers. In both cases the methods for drawing the sample can be done either manually or by computer. Computer programs have been designed, which with minimal input requirements, draw a random sample.

First, the lottery method can be used when drawing a small sample. Initially, one would number all cases or individual names. Then the numbers would be placed on a piece of paper or small card which would be placed in a container. Finally, the number of cards or pieces of paper required for the sample are drawn. Variations of this procedure include using a roulette wheel or bingo wheel, or by flipping a coin.

A second method for drawing a random sample is to use a table of random numbers. This is particularly well adapted for drawing large samples. And it is a method which minimizes bias associated with the selection; this method does so more effectively than the previously described lottery method.[71]

Tables of random numbers can be found in many research and statistics textbooks. The procedure for manually drawing a random sample includes the following steps:

1. Identify population and appropriate sample size.

2. Number all cases in the population serially starting with 00.

3. To determine the starting point, close eyes and place a pointer on the table of random numbers. This will define the starting point.

4. Then, reading horizontally, vertically, or diagonally one reads the numbers to be selected until the total sample is drawn.

Assume for example, one needed to draw a sample of ten Health Assistant curriculum graduates from a population of thirty-two former vocational education students. First, the individual would number each former student starting with 00 until all students received a numerical assignment. Then identify a preestablished starting point by closing one's eyes and letting your finger fall at some spot on a page of the table of random numbers. Then read the closest two digits above your

00 - Pedro Jones
01 - Maria Jones
o
o
o
31 - Seon Jones
32 - Anne Jones

fingernail. Use the first two digits to identify the row and the last two to identify the column. And select ten numbers. For example, if the starting point was selected in row 2, column 1 and you read the numbers vertically, the sample would consist of individuals assigned the following numbers: 00, 31, 30, 29, 06, 12, 24, 15, 09, 19.

	01	02	03	04	05	06	07	08	09	10
01	53	74	91	41	89	77	01	99	40	50
02	00	84	02	04						
03	31	06	64	10						
04	74	12	72	13						
05	30	24	59	15						
06	50	47								
07	60	15								
08	92	09								
09	29	96								
10	35	19								

You would start in row 2, column 1, select the first individual with the value 00, then proceed down the column. You would continue by going to the next column and so on using a vertical reading pattern until the sample of ten is chosen from numbers 00 through 32.

Individuals who have access to computers may find that using a computer program to draw a sample is far easier and more time saving. This is particularly true if large samples are needed.

In summary, the sampling checklist presents four important factors to consider in developing the sampling plan. While careful sampling is extremely important in survey research, it is but one part of an integral process. It should be remembered, in particular, that sampling is extremely important in survey research, it is but one part of an integral process. It should be remembered, in particular, that sampling is only one of several sources of error. The quality of the questionnaire, the overall response rate in interviewing, and the interviewing and reliability of the coding are other factors which influence the accuracy of the data. Thus, in planning the survey one should aim for an adequate balance of precision and quality at all stages. There is little to be gained from a highly precise sample which is undercut by a low response rate, poor data collection procedures, and/or errors in processing of or data reporting.

Checklist for Sampling Procedures

Yes	Somewhat	No	Does your follow-up system's sample provide the following?
____	____	____	1. The desired information, accurately, at the desired price?
____	____	____	2. Random sample selection by: a) simple random sampling? b) stratified sampling? c) cluster sampling? d) systematic selection? e) unequal probabilities of selection? f) multistage sampling?
____	____	____	3. Non-random sample selection by: a) haphazard sampling? b) judgment sampling? c) quota sampling?
____	____	____	4. An appropriate sample size statistically defined?
____	____	____	5. Response rate statistically identified?

Figure 3-11.

Sampling Chart

Type of Sampling	Brief Description	Advantages	Disadvantages
A. Simple random	Assign to each population member a unique number; select sample items by use of random numbers.	1. Requires minimum knowledge of population in advance. 2. Free of possible classification errors. 3. Easy to analyze data and compute errors.	1. Does not make use of knowledge of population which researcher may have. 2. Larger errors for same sample size than in stratified sampling.
B. Systematic	Use natural ordering or order population; select random starting point between 1 and the nearest integer to the sampling ratio (N/n); select times at interval of nearest integer to sampling ratio.	1. If population is ordered with respect to pertinent property, gives stratification effect, and hence reduces variability compared to A. 2. Simplicity of drawing sample; easy to check.	1. If sampling interval is related to periodic ordering of the population, increased variability may be introduced. 2. Estimates of error likely to be high where there is stratification effect.
C. Multistage random	Use a form of random sampling in each of the sampling stages where there are at least two stages.	1. Sampling lists, identification, and numbering required only for members of sampling units selected in sample. 2. If sampling units are geographically defined, cuts down field costs (i.e., travel).	1. Errors likely to be larger than in A or B for same sample size. 2. Errors increase as number of sampling units selected decreases.
1. With probability proportionate to their size.	Select sampling units with probability proportionate to their size.	1. Reduces variability.	1. Lack of knowledge of size of each sampling unit before selecting increases variability.
D. Stratified 1. Proportionate	Select from every sampling unit at other than last stage a random sample proportionate to size of sampling unit.	1. Assures representativeness with respect to property which forms basis of classifying units; therefore yields less variability than A or C. 2. Decreased chance of failing to include members of population because of classification process. 3. Characteristics of each stratum can be estimated and hence comparisons can be made.	1. Requires accurate information on proportion of population in each stratum, otherwise increases error. 2. If stratified lists are not available, may be costly to prepare them; possibility of faulty classification and hence increase in variability.
2. Optimum allocation	Same as 1 except sample is proportionate to variability within strata as well as their size.	1. Less variability for same sample size than 1.	1. Requires knowledge of variability of pertinent characteristic within state.
3. Disproportionate	Same as 1 except that size of sample is not proportionate to size of sampling unit but is dictated by analytical considerations or convenience.	1. More efficient than 1 for comparison of strata or where different errors are optimum for different strata.	1. Less efficient than 1 for determining population characteristics; i.e., more variability for same sample size.

Reprinted from Russell L. Ackoff, The Design of Social Research (Chicago: University of Chicago, 1953), p. 124. By permission from The University of Chicago Press. Copyright 1953 by The University of Chicago.

Figure 3-11. — continued

Type of Sampling	Brief Description	Advantages	Disadvantages
E. Cluster	Select sampling units by some form of random sampling; ultimate units are groups; select these at random and take a complete count of each.	1. If clusters are geographically defined, yields lowest field costs. 2. Requires listing only individuals in selected clusters. 3. Characteristics of clusters as well of those of population can be estimated. 4. Can be used for subsequent samples, since clusters, not individuals, are selected, and substitution of individuals may be permissible.	1. Larger errors for comparable size than other probability samples. 2. Requires ability to assign each member of population uniquely to a cluster; inability to do so may result in duplication or omission of individuals.
F. Stratified cluster	Select clusters at random from every sampling unit.	1. Reduces variability of plain cluster sampling.	1. Disadvantages of stratified sampling added to those of cluster properties. 2. Since cluster properties may change, advantage of stratification may be reduced and made sample unusable for later research.
G. Repetitive: Multiple or Sequential	Two or more samples of any of the above types are taken, using results from earlier samples to design later ones, or determine if they are necessary.	1. Provides estimates of population characteristics which facilitate efficient planning of succeeding sample, therefore reduces error of final estimate. 2. In the long run reduces number of observations required.	1. Complicates administration of field work. 2. More computation and analysis required than in non-repetitive sampling. 3. Sequential sampling can only be used where a very small sample can approximate representativeness and where the number of observations can be increased conveniently at any stage of the research.
H. Judgment	Select a subgroup of the population which, on the basis of available information, can be judged to be representative of the total population; take a complete count or sub-sample of this group.	1. Reduces cost of preparing sample and field work, since ultimate units can be selected so that they are close together.	1. Variability and bias of estimates cannot be measured or controlled.
I. Quota	Classify population by pertinent properties; determine desired proportion of sample from each class; fix quotas for each observer.	1. Same as above. 2. Introduces some stratification effect.	1. Introduces bias of observers' classification of subjects and non-random selection within classes.

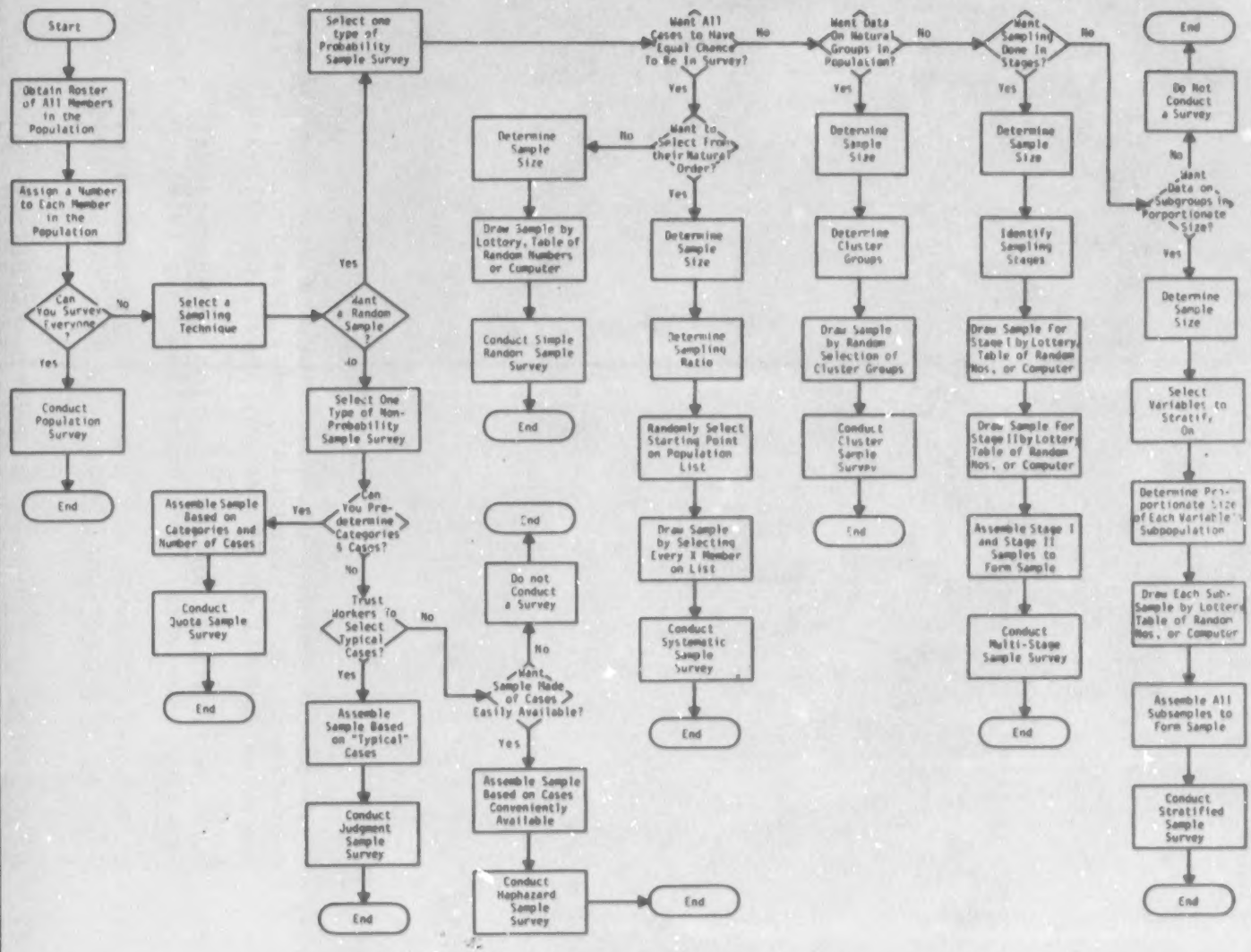
Start
Obtain Roster of All Members in the Population
Assign a Number to Each Member in the Population
Can You Survey Everyone?
No
Yes
Conduct Population Survey
End
Select a Sampling Technique
Want a Random Sample?
Yes
No
Select one type of Probability Sample Survey
Select One Type of Non-Probability Sample Survey
Can You Pre-determine Categories & Cases?
Yes
No
Assemble Sample Based on Categories and Number of Cases
Conduct Quota Sample Survey
End
Trust Workers to Select Typical Cases?
No
Yes
Assemble Sample Based on "Typical" Cases
Conduct Judgment Sample Survey
End
Want Sample Made of Cases Easily Available?
No
Yes
Do not Conduct a Survey
End
Assemble Sample Based on Cases Conveniently Available
Conduct Haphazard Sample Survey
End
Want All Cases to Have Equal Chance To Be In Survey?
No
Yes
Want to Select From their Natural Order?
No
Yes
Determine Sample Size
Draw Sample by Lottery, Table of Random Numbers or Computer
Conduct Simple Random Sample Survey
End
Determine Sample Size
Determine Sampling Ratio
Randomly Select Starting Point on Population List
Draw Sample by Selecting Every X Member on List
Conduct Systematic Sample Survey
End
Want Data On Natural Groups in Population?
No
Yes
Determine Sample Size
Determine Cluster Groups
Draw Sample by Random Selection of Cluster Groups
Conduct Cluster Sample Survey
End
Want Sampling Done In Stages?
No
Yes
Determine Sample Size
Identify Sampling Stages
Draw Sample for Stage I by Lottery, Table of Random Nos., or Computer
Draw Sample for Stage II by Lottery, Table of Random Nos., or Computer
Assemble Stage I and Stage II Samples to Form Sample
Conduct Multi-Stage Sample Survey
End
End
Do Not Conduct a Survey
No
Want Data on Subgroups in Porportionate Size?
Yes
Determine Sample Size
Select Variables to Stratify On
Determine Proportionate Size of Each Variable's Subpopulation
Draw Each Sub-Sample by Lottery, Table of Random Nos., or Computer
Assemble All Subsamples to Form Sample
Conduct Stratified Sample Survey
End

Figure 3-12
Flowchart for Making Sample Design Decisions

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SECTION 4

PROCEDURES AND MECHANICS FOR CONDUCTING FOLLOW-UP STUDIES

SECTION FOUR

PROCEDURES AND MECHANICS FOR CONDUCTING FOLLOW-UP STUDIES

This section identifies major decisions which need to be made and various methods to use in carrying out the procedures necessary for conducting a follow-up study. Specific focal areas include:

- major data collection methods
- choosing an automated or manual system for doing follow-up
- orientation of completer or early leaver to the follow-up study and questionnaire
- achieving acceptable response rates
- following-up nonrespondents

Major Data Collection Methods

There is no standardized method for collecting follow-up data at the state or local level. Several methods have been used successfully for collecting the data and information. They are: (1) mailed questionnaires, (2) telephone interviews, (3) personal interviews, and (4) combinations of the above. One of the most frequently employed methods is the mailed questionnaire. A list of positive and negative factors related to the use of mailed questionnaires was prepared by Parten. A partial list of these factors (comprised of those applicable to follow-up) is presented here.

Positive Factors

- Questions are standardized, whereas in the personal or telephone interviews, the investigator may alter the questions or suggest answers.
- The questionnaire can be answered at the convenience of the respondent. This gives her/him more time to consider her/his answers.
- The questionnaire may reach individuals who could not easily be reached by other methods. This would be true for those who had moved or did not have telephones.
- Any personal antagonism towards interviewers which may lead to refusal to give desired information is avoided.

Negative Factors

- Response rates from mailed questionnaires sent to the general public are usually very low, often ranging from 10 to 20 percent.
- People who return questionnaires are often not representative of the groups to whom the questionnaires are sent due to various types of biases.
- The questions used must be simple and practically self-explanatory, since no training can be given the informant on the meaning of individual questions and on how to complete the questionnaire.
- In most studies, the questionnaire must be relatively brief if a high rate of return is to be obtained.
- Up-to-date address lists of potential survey informants is difficult to find. This is particularly true when surveying former students one or more years after leaving school.[72]

The advantages and limitations of the interview (telephone and personal) method of data collection offered by Chatobar and Lad include:

Positive Factors

- The personal characteristics of the interviewer can affect the interviewee's responses. Sometimes the interaction is beneficial; for example, unusually good rapport between the interviewer and interviewee can lead to a candid and in-depth interview. However, it should be noted that either party can be "turned off" by the other and not be as willing to talk openly or listen carefully.

- Data collection is more flexible. Respondents may answer in their own words.

- Additional follow-up questions may be asked to add more depth to or clarify hazy responses in an interview.

Non-Positive Factors

- The interview process is expensive and time consuming.

- Some interviewees may feel threatened or put on the spot by an interview. As a result, they may refuse to be interviewed or not answer the questions truthfully.

Automated or Manual Data Processing Systems

In any follow-up system, serious attention must be given to the data processing component. This consists of the procedures and equipment, both hardware (electronic data processing equipment) and software (computer programs and the like) for processing, accessing, and updating the data. The measure of adequacy of these procedures is its efficiency, which is defined as the ease and rapidity with which needed data and information can be produced.

Four basic data processing systems commonly used include: (1) manual, (2) mechanized, (3) output-oriented automated, and (4) data-oriented automated.[73] The following information describing those systems is obtained from the publication, Management Information Systems for Vocational Education.

In a manual system, data are stored on paper forms, such as the original data collection instruments or some form of abstracts or transcriptions. An individual needing information must search through the files to obtain the necessary information. Except for the very smallest data bases, this is the least efficient of all data processing systems, and totally unworkable with data bases of any major size.

The second method is the mechanized system which uses some type of machinery to aid in accessing the data. Card sorters and tabulating machines are the most common examples. Data are kept on punch cards, and processed through the machines when information is needed. This system is suitable only with very small data bases because the number of ways which the machine can be programmed is limited. Though this system is faster than manual systems, it is still very slow by current standards.

Automated systems include the output-oriented and data output systems. An automated system is one which uses electronic computers. Data are stored on magnetic tape, magnetic disk, or similar devices. A computer, depending on type and size, can be programmed in nearly limitless ways to access, update, and analyze the data in a minimal amount of time.

The output-oriented automated approach to the creation of a follow-up system first involves a needs analysis. A particular information need is identified, then a computer program is written to create the data base and provide for updating capabilities. As additional information needs are identified, other computer programs are written, tested, and operated to produce additional information from the original data file. For each new information requirement, a systematic cycle of problem definition, consideration of alternatives, identification of constraints, tradeoffs and solutions, programming, testing, and operation must take place. This is relatively slow, cumbersome, time-consuming, and expensive. By the time the information is produced, the original needs may have changed or disappeared altogether. Seemingly minor changes in the computer programs, (e.g., changing the field length in a particular record, or redefining a data element) can have significant effects throughout the system. If a question is asked that was not anticipated in the system design, it may be next-to-impossible to answer without spending much time and effort writing special programs. This whole system is input-output dependent: the output is severely limited by the format of the input and the design of the programs to produce the output. The system can work well for the specific tasks that it was originally designed to do, but it has limited flexibility. It cannot easily handle unanticipated needs.

Data-Oriented or Generalized Data Management Systems

The key to the data-oriented or generalized data-based management approach is input-output independence. The input, the data elements used in the follow-up system, is determined only by consideration of the kinds of information one wishes to have available. Obviously, this is determined by your follow-up objectives and the questions derived from those objectives. Output need not be determined until the need for the output arises.

Suppose a state or local director of vocational education needs to compare the cost of placing students in jobs related to their field of training using a formalized school placement service with the cost of placing students in jobs related to their field of training without using a formalized school placement service. In the output-oriented system, there would be no way to make the comparison if the capability had not been designed into the report generating programs (unless someone spends considerable time writing a special computer program).

In a data-oriented system, commands for retrieving the information can easily be formulated at the time the question is asked, as long as the information is contained somewhere in the data base (no system can be totally input-output independent). For example, the cost per student placement in related field of training using a formal school placement service cannot be determined if the data base contains no cost data or if the data base is not interactive with other data bases in a state or local management information system having cost information. Moreover, the point to be stressed is that a follow-up system or data base should have interactive capabilities with or be a part of a comprehensive management information system.

A data oriented system achieves its input-output independence through the use of one or two types of computer programs: a generalized information retrieval system (GIRS) or a generalized data based management system (GDBMS). There are a number of both types available from commercial software vendors, and some have been developed by universities and government agencies. The GIRS and GDBMS serve similar purposes, but the latter is considerably more sophisticated and flexible, and achieves input-output independence to a greater degree than does the former. Both accept instructions, or commands, when they are executed, so that the desired output need not be known ahead of time.

In an output-oriented system, no generalized computer program is used. Typically, a variety of programs are written "in house" to generate specific predetermined reports. These programs are referred to as standard, or "canned" programs. Generally, they do not accept instructions when executed, and, therefore, can generate only the output that they were designed to generate. Similar programs written to respond to requests for atypical information, for which a standard program does not exist, are called "ad hoc" programs.

In the case of data processing, the difference between data-oriented systems, and output-oriented systems is a qualitative one; that is the latter simply cannot do what the former can. While both the output-oriented systems and the data-oriented systems can produce, update, and analyze information rapidly, only the latter contains the flexibility needed to respond to unanticipated and changing needs. The output-oriented systems will function efficiently only in a static environment where all information needs are known.

Orientation of Staff and Completer or Early Leaver to the Follow-up Study and Questionnaire

The staff at either or both the state and local education agencies implementing the follow-up system or study will require orientation. Proper orientation procedures should be followed to increase the likelihood for obtaining accurate follow-up information and to increase the participation of those to be followed up.

The major purposes for the orientation for staff members is to provide a basis for using the results of the system or study, and improve the ability of those persons in responding to questions about local or state vocational education. Further, the orientation period provides the necessary information for completing and processing of the data. At a minimum, staff members will need to understand:

- Directions for completing instruments at the local level
- The time frame for collecting completed follow-up instruments
- Staff roles in the process of data collection
- The types of data produced by the follow-up system[74]

Also, for those SEA or LEA personnel who have the responsibility for processing follow-up data, it is necessary that they be provided with an overall understanding of the follow-up system--purpose, procedures, and use of results. Further, this orientation can provide them with a needed background for making changes or developing new data processing routines or programs to satisfy requests for information.

Successful implementation of the follow-up system by the vocational agencies in the states requires the cooperation of the local schools who will be providing the follow-up data. Either teachers or their former students will be providing data. Thus, it is essential that key local level personnel be involved in the installation process. It would be beneficial to have those state level personnel, if the follow-up system is centralized at the state level, sponsor orientation meetings to inform local agency personnel concerning:

- The purpose of the follow-up system or study
- The procedures for completing data forms
- The feedback procedures required
- The potential usefulness of the system for local program planning and decision-making

Moreover, orientation time should include a discussion of instructions required of local staff to complete the follow-up instrument, and the time frame for receiving, completing, and returning the follow-up instruments to the state agency.

Often complaints from local school people about state level demands for data are concerned with the duplication of information requested, and failure to receive any feedback of the results of studies in which they participate. Any follow-up system or study should be designed to minimize or eliminate potential problems over these two points. The system should provide for each participating local school to receive printouts or reports summarizing the data which it supplied to the state vocational agency. A discussion of intended feedback to the respondent(s) is a vital part of any orientation session.

Another function of orientation meetings is to solicit suggestions from participants concerning procedural aspects for local participation, and to determine if additional data or information ought to be included in the follow-up study which would be of value to local program planners.

Periodic meetings with local personnel would be useful once the system is installed and operating. These meetings would be held to:

- o Inform participants of the follow-up study results
- o Describe anticipated changes in procedures or in the follow-up system
- o Solicit reactions and suggestions for the improvement of the follow-up system

Another, equally important, part of an orientation process for follow-up studies, is the orientation for students who will be asked to respond to a follow-up questionnaire at some point in time after they have left school.

It is suggested that shortly before students leave school or a vocational program, they should be informed that they will be asked to supply data and information for a follow-up study. Indicate to the students the method to be used: personal interview, mail questionnaire, or phone survey. Explain why the follow-up is being done, its value to the school, state, and federal agency; and emphasize its importance in helping to make the educational process serve them more efficiently. Also, expose them to the follow-up instrument or, at the very least, to types of questions to be asked or data and information to be sought. The past experiences of researchers and of others who have conducted follow-up studies, show that this procedure will greatly improve the rate of returns. Certainly, if students are introduced to the follow-up study and its requirements by someone they know and respect, they will be more likely to respond to a questionnaire or interview when asked to do so.

For example, while still in school, students should have the importance of responding to a follow-up questionnaire explained. They should be told the importance of a student's visit to the school, for job placement or job adjustment advice and consultation after leaving school, whether she/he is employed or unemployed. A logical reason for the above comments can be presented to the students, such as "The instructor keeps a complete individual record of the student during her/his time in the vocational program, therefore, the follow-up information plus the individual record will enable the instructor to continue helping her/him with regard to occupational advancement or adjustment, and/or further education and training."

It is recommended that a student enrollment or termination subsystem of a management information system be utilized; or if one does not exist, the person responsible for follow-up should provide potential respondents with a "we have moved to" card that lists parent's or guardian's address as a contact for obtaining a forwarding address.

Although the positive attributes stand out in establishing an orientation process, there are negative factors which prevail. Specifically, teachers may inadvertantly introduce bias in the results by influencing a former student's answers when discussing or explaining certain questions.

In summary, an orientation with prospective respondents prior to receiving the questionnaire is most important in obtaining a good response rate and maximizing efforts to obtain reliable and valid data. The primary purpose of the orientation procedure is to motivate potential respondents to participate in the follow-up study by increasing the potential respondents understanding of these facts: that returning the questionnaire may help them fulfill the goal of improving the educational process of vocational education, and provide information which can further assist those former students in their post school experience. The orientation checklist presents important factors to consider in conducting an orientation session.

Locating Respondents and Achieving Acceptable Response Rates

Locating former vocational students and obtaining a satisfactory response rate can be a major problem in conducting a follow-up study. A number of methods have proven effective in locating respondents. All require persistence and determination on the part of the person or persons responsible for conducting the follow-up.

As mentioned in the subsection, "Orientation to the Follow-up Study", an excellent way of maximizing returns and minimizing the number of non-respondents is to provide a preorientation for those in-school students who will be asked to complete a follow-up form after leaving school. A number of research studies were conducted to determine the effects of orientation procedures on respondents, and it was found that the percentage of response to the mail questionnaire tended to be high.[75] One study concluded that the response rate was also better when the respondent had a special interest or involvement in the content of the questionnaire.

Checklist for Orientation of Staff, Early Leaver and Completer to the Follow-up Study and Questionnaire

Yes	Somewhat	No	Does your follow-up system include an orientation for:
____	____	____	1. State level personnel?
____	____	____	2. Local agency personnel?
____	____	____	3. Students?

If the answer to any of the above questions is "yes." Does your follow-up orientation include the following:

State level personnel:

____	____	____	1. Directions for completing instruments at the local level?
____	____	____	2. The time frame for collecting completed follow-up instruments?
____	____	____	3. Staff roles in the process of data collection?
____	____	____	4. The types of data produced by the follow-up systems?

Local agency personnel:

____	____	____	5. Purpose of the follow-up system?
____	____	____	6. Procedures for completing data forms?
____	____	____	7. Feedback procedures required?
____	____	____	8. Potential usefulness of the system for local program planning and decision-making?

Students:

____	____	____	9. Method to be used to collect information?
____	____	____	10. Why the follow-up study is being done?
____	____	____	11. Importance of their response?
____	____	____	12. Discussion of a sample follow-up instrument?

Various kinds of incentives tend to increase the return of mailed follow-up questionnaires. A vocational education study was conducted by Pucel in which objects (or incentives) were mailed with the questionnaires.[76] These devices included such things as a small golf pencil printed with the words, "Thanks/University of Minnesota," a packet of instant coffee (to be used while completing the questionnaire), and the use of light green paper for the cover letter. It was found that the response rates from the former students who received any one of the incentives ranged from 6.6 percent to 11.8 percent higher than the response rates of the control group who received no additional incentives. Further, Pucel found that at the end of a thirty-five day period, 63.2 percent of those who were sent three types of incentives had responded, while only 42.9 percent of those who had not received incentives had responded.[77]

The most common and frequently used method to increase response rates is the "follow-up" or "reminder" letter. Elaborating on this point, Orr concluded from the results of Project Talent, which involved 88,000 former high school students, that postal card reminders mailed after the first and second waves of questionnaires had little discernable effect when compared to the effort of mailing new questionnaires.[78]

Salomone and Miller conducted an elaborate experimental study based on an extensive review of previous research on increasing mail questionnaire return rates. Based on careful analyses of sixteen different patterns or combinations of mailing techniques (e.g., appeals to humor, postcards, token compensation (a quarter) they concluded that the use of a monetary inducement or token compensation plus several follow-up letters produced a substantial return rate.[79]

The following practices are used by many individuals in conducting follow-up studies:

- Informing vocational students, prior to graduation, concerning the purpose of following up vocational graduates and the kinds of information they will be asked to provide
- Using short and uncomplicated instruments, asking only necessary and relevant questions
- Providing a prepaid return envelope
- Avoiding personal information as much as possible

- Placing difficult questions last
- Offering to mail out the address list and a few words about classmates to all who respond
- Sending a newspaper clipping about the study
- Using colored or unusual types of instruments to attract attention
- Using a personalized cover letter signed by a former teacher or counselor[80]

Also, some individuals find it to be advantageous to send the follow-up questionnaire on a former student's birthday along with a birthday card or during a holiday season along with an appropriate holiday card.

In summary, a satisfactory or acceptable rate of return is contingent on many factors, such as representativeness of sample, size of population or sample, type of data collected, and inferences or generalizations to be made. Some recommend that, for follow-up studies of former vocational students, a goal of 80 percent rate of return should be set.[81] In addition, it is important that nonrespondents (generally a sample of 5 to 10 percent) be contacted to further validate the data. Commonly, contacting the nonrespondents by phone or through a personal interview is recommended.

The following methods can be used to locate former vocational students who do not respond to initial surveys:

- Writing "Please forward" on announcements and survey instruments
- Sending self-addressed change of address cards to parents or guardians or nonrespondents so they can provide their current address
- Obtaining cooperation from local news media (newspapers, radios, and television) for public service announcements concerning the follow-up survey[82]

The checklist which follows presents thirteen important questions for achieving acceptable response rates.

Checklist for Achieving an Acceptable Response Rate

Yes	Somewhat	No	Does your follow-up system attempt to increase its response rate by:
____	____	____	1. Informing vocational students prior to graduation, concerning the purpose of following up vocational graduates and the kinds of information they will be asked to provide?
____	____	____	2. Using short and uncomplicated instruments, asking only necessary and relevant questions?
____	____	____	3. Including incentives (e.g., pencil, packet of instant coffee) with the mailed questionnaire?
____	____	____	4. Providing a prepaid return envelope?
____	____	____	5. Avoiding personal information as much as possible?
____	____	____	6. Placing difficult questions last?
____	____	____	7. Offering to mail out the address list and a few words about classmates to all who respond?
____	____	____	8. Sending a newspaper clipping about the study along with questionnaire?
____	____	____	9. Using colored or unusual types of instruments to attract attention?
____	____	____	10. Using a personalized cover letter signed by a former teacher or counselor?
____	____	____	11. Writing "Please forward" on announcements and survey instruments?
____	____	____	12. Sending self-addressed change of address cards to parents or guardians of non-respondents so they can provide a current address?
____	____	____	13. Obtaining cooperation from local news media (newspapers, radio, and television) for public service announcements concerning the follow-up survey?

When to Do Follow-up and How Often

Fundamentally, the purposes or objectives for collecting follow-up data and the resources available to undertake a follow-up study determine when and how often those studies are conducted.

At a minimum, former vocational students and their employers should be followed-up to:

- Determine former students' initial job or educational placement which includes job title, job duties, job relatedness to training, or educational program of studies
- Identify adequacy of the occupational training program
- Define a measure of job satisfaction
- Ascertain extent of geographic mobility
- Identify hourly wages or salary
- Define employer rating of training

This minimum amount of data will satisfy the current annual federal reporting requirements as defined in Public Law 94-482 or the proposed National Center for Educational Statistics' (NCES) Vocational Education Data Systems (VEDS). See Section 6 for a discussion of VEDS as it applies to follow-up.

Follow-up studies conducted one year after students have graduated can provide information on occupational mobility, job adjustment factors, and other work related data. Obviously, these data have a primary value for researchers and labor economists, but they also have potential value for vocational educators. They can use the data in improving program offerings and to assist in making program decisions.

Preliminary Data for the Follow-up Study. Information collected from students just prior to graduation (exit interview) provides baseline data. Most often, the information collected includes: the student's name, permanent mailing address, social security number, vocational program taken, employment plans and, if known, future job title, and future educational plans.

Three to Six-Month Follow-up Study. Generally, state agencies can comply with reporting requirements set by the federal government and obtain data for state planning purposes by collecting follow-up information three to six months after graduation. Examples of questions which may be asked at this time include:

- Are you employed?
- What is your job?
- What are your duties?
- Is your job related to your vocational training?
- What is your wage or salary?

Many consider measurements of essential worker perceptions or experiences taken in the three to six months after a student leaves school to be premature. This criticism may also apply to responses received from the employer who hired the former vocational student.

One-Year or Fifteen-Month Follow-up Study. For those former vocational students who leave or complete their course requirements at the end of the school year, approximately one year after comes at the beginning of summer. However, the summer would be a poor time to conduct this survey because of vacations and the cyclical conditions of the labor market. Therefore, it is advisable to conduct the follow-up in the early fall. Questions to be asked of students and their employers are similar to those asked in the three to six month follow-up study.

Three-Year Follow-up Study. A primary reason for conducting a three-year follow-up study is to provide comprehensive data on former students, with an emphasis on those completers or early leavers completing postsecondary educational programs. Generally, those individuals will have completed their studies or post-secondary education and training objectives and will have been employed for at least one year. Also, an employer survey is recommended at this time to obtain information on the satisfactoriness of the former student as an employee. The types of questions asked should center around:

- Present employment or educational status
- Change of employment or education experiences since graduation

- Their evaluation of the high school instructional program and guidance services
- Job satisfaction
- Employer rating of former students' job performance

As in the timing for conducting the one-year or fifteen-month follow-up, it is recommended that one conduct the three-year follow-up in the fall of that year.

Longitudinal Follow-up Studies. Longitudinal follow-up studies are generally based on a continuous assessment of a sample of former students over a relatively long period of time--commonly ten or more years. These studies, although very beneficial for providing meaningful trend data and information, create major administrative, financial, and procedural problems. They can be very costly in terms of dollars and time needed to conduct them efficiently. Ebel states that this type of study is ideally more rigorous, but it raises a particular problem with respect to maintaining the representative sample over the years.[83]

A number of significant longitudinal studies which focus on youth have been conducted. For more detailed information on designing and conducting of those comprehensive efforts, see:

- Career Thresholds: A Longitudinal Study of the Educational and Labor Market Experience of Male Youth 14 to 24 Years of Age, Volume 1. (Parnes, 1970)
- Design for a Study of American Youth (Flanagan, 1962)
- National Longitudinal Study of High School Class of 1972: A Capsule Description of High School Services (National Center for Educational Statistics, 1976)
- A Longitudinal Study of Vocational Development (Impelliteri and Kapes, 1972)

These efforts can provide detailed information on the study of employment history, occupational and geographic mobility, worker adjustment patterns, and wages and salaries.

Confidentiality and Privacy Act Considerations

In designing and conducting a follow-up study and reporting the results, one must take into consideration the federal legislation which relates to the collection of individual data. The primary legislation is the Family Educational Rights and Privacy Act (Public Law 93-380 and amended by section 2 of Public Law 93-568). This law was passed by Congress in 1974 to protect the privacy of student education records, and applies to all schools that receive money from the U. S. Office of Education. This Act gives certain rights to parents regarding their child's educational records, and these rights transfer to the student or former student who is eighteen years of age or older.

What specific requirements from this law apply to the collection of data in a follow-up study? One requirement which is extremely important is that parents and students eighteen years of age and older must provide written permission to the school before the school can release any information from a student's record. However, in an effort to permit the school to continue its normal business and activities, the law allows a school to set its own rules about who among the following people may see records without the required consent:

- School employees who have a need to know
- Other schools to which a student is transferring
- Parents when a student over eighteen is still a dependent
- Certain government officials who need to know to carry out lawful functions
- Sponsors of financial aid to a student
- Organizations doing certain studies for the school
- Individuals who have obtained court orders or subpeonas
- Persons who need to know in cases of health and safety emergencies[84]

The school can release "directory" type information such as one's name, address, telephone number, date and place of birth, and honors and awards, activities, to anyone without first getting permission. However, the school is required to notify parents and students of the type of information that is classified as "directory" information, and provide a reasonable amount of time to allow the parent or student to inform the school not to reveal "directory" information about them.

Based upon the provisions of the Act as mentioned above, each respondent in a follow-up study must be assured that information will be held in confidence and that only aggregate data will be publicly disseminated for the purposes of improving vocational education.

It has been reported that questionnaires are much more likely to be returned if the respondent has the opportunity to indicate on the questionnaire if he/she desires the follow-up information to be kept confidential.[85] It is suggested that a question with a yes or no answer be constructed to provide for this situation. Some recommend that a respondent be asked to sign the questionnaire with assurance that all data will be treated impersonally. Consent letters found in Appendix B contain all seven aspects of informed consent as required by professional standards committees and from relevant regulations of the law.

Centralized and Decentralized Approaches to Conducting a Follow-up Study

There is a continuing debate over the merits of the decentralized approach to follow-up, therein the teacher is the primary data gathering source, versus the centralized approach, which is a state operated system wherein the follow-up form is sent directly to the student. To date, there is a minimal base of information in the follow-up literature to objectively assess the merits of either approach. However, because a follow-up study is integrally related to a management information system, an examination of decentralized and centralized management information systems could prove helpful.

Whether a centralized system is better than a decentralized one or vice versa is contingent upon many variables. There is no "right" answer--each system comes complete with a set of advantages and disadvantages. In fact, the issue may not be that clear cut, and it is possible to combine features of the centralized and decentralized systems, thus creating what may be called a "mixed information system" concept. Specifically, in a state initiated follow-up system, the SEA prepares the necessary forms and sends them to local school districts for data collection. But instead of completing the form, the teachers send the forms to the student and upon the student returning the questionnaires to the LEA, they are then sent to the state agency for data processing and report preparation.

Centralized Follow-up System. A centralized system for conducting a follow-up study is one in which a state department conducts the survey of former vocational students by going directly to the student for the necessary information. A decentralized system is defined as a follow-up of former students wherein information collected is provided by the teacher based primarily on recall. This information, in many cases, is a secondary source and is considered by many to be biased or incorrect. The advantages of this system appear to be a high response rate and less cost because of elimination of the many mailings.

There are individuals who believe a centralized system which is operated by a state department of education is more efficient and productive. They attribute the efficiency and productivity to the use of a centralized staff devoted to the gathering, coding, and reporting all the data and information. A study of the relative costs of staff to conduct a follow-up in thirty local agencies as compared to costs of a centralized system found that aggregate costs of systems in all local agencies would far exceed costs of a centralized system.[86] Also, it was indicated that a centralized system can more efficiently respond to changes made in federal reporting requirements, state board requirements, etc., by having one centralized staff respond to those needs rather than a large number. The communications and translation of needs problems can be minimized by dealing with one group rather than many groups. By having a centralized system, a major objective is to minimize the work of local education personnel. Certainly, eliminating another form to fill out is a welcome relief to the local teacher or administrator.

Decentralized Follow-up System. There are several advantages of a decentralized follow-up system which make it popular with a number of state and local education agencies. First, by asking the teachers about their own graduates, there is a tendency to have a high response rate. Also, the advantage of not having to mail a questionnaire to each student reduces the amount of time needed to obtain the data, the cost of conducting a follow-up study, and the number of full-time personnel needed to collect and process the data.

Some individuals cite the major disadvantages as the validity of the data and the restriction in the scope of information or data (e.g., attitudinal questions about a program area and training can be restrictive and result in questionable results when the teacher is the intermediary). However, there are certain states which have modified the decentralized system, that is the teachers are responsible for preparing the questionnaire and securing the information directly from the students. In conducting parallel follow-up studies to ascertain the reliability and validity of that follow-up data, one study found that there is no significant difference in the way students and teachers answer certain follow-up questions.[87] Another validation effort focusing on a decentralized approach used by the Colorado State Department of Education follow-up system, has also shown no significant difference between follow-up question responses of the teachers and their respective students.

Making the Decision to Use a Centralized or a Decentralized System. In choosing the appropriate information system, a series of generally agreed upon advantages and disadvantages from each type of information system should be considered. Individuals favoring the decentralized approach contend that the data collected is usually more accurate and the response rate is greater since the LEAs know what their students are doing and can trace their whereabouts easily. They also, in most situations, feel that the items included on the questionnaire are tailored to meet their information needs. Advocates of the centralized approach state that is considered to be less costly, if the sample size is large enough to make computer services cost-effective, less time consuming, eliminates levels of administration and operation, and requires less personnel--questionnaires are mailed directly to the students.

Whichever information system is chosen depends on your best judgment, hopefully objectively and cost effectively defined. The "right" system is the one that best meets your decision-making needs. Although advantages and disadvantages outlined above are intended to present a brief overview of the current arguments in the field and the literature, those planning to install a centralized or decentralized system should begin sorting out what is best for their situation by thinking about the following questions:

- How much time is available to collect the data?
- How much money is available to collect the data?
- How many individuals are available to collect the data?
- How can the most accurate data be collected?
- How can the data best be processed and reported for use in decision making?

Factors to be Considered in Defining Follow-up Costs

Any state or local education agency planning to install a follow-up system or conduct a follow-up study should determine, to the extent possible, all cost factors in order to provide adequate resources to support that effort. Generally, resources required for design and development, installation, and operation of the follow-up system include sufficient dollars to hire qualified personnel to maintain or install the system and to purchase necessary services, equipment and materials. These could include:

- Printing of data collection instruments
- Distribution, collection of instruments from local schools, employers or former students
- Preparation of data collection instruments for manual or computer processing--key punching, computer tape or disk preparation
- Miscellaneous data processing supplies, copying, postage, letters, telephone calls, etc.
- Clerical and other personnel needs in report preparation and dissemination

Naturally, actual expenditures will vary from year to year with the changing costs for materials, supplies, and wages and salaries. Also, one can expect variances to reflect the method used to obtain the follow-up data (e.g., mail questionnaire, telephone survey, personnel interview); the number of individuals included in the survey; and rising inflation.

A detailed cost analysis, on a follow-up study conducted by either a state or local education agency, is recommended. The different types of cost information which one might want to include are:

- Initial design and start-up costs (materials, personnel, installing the system, communications, etc.)
- System or study operation costs (costs identified after development has been completed and the follow-up system is operating)
- Total follow-up system costs by year of local education agency and/or state education agency
- Per pupil and employer cost by year or type of follow-up (e.g., exit interview, six-month, one-year, three-year, five-year, etc.)
- Costs by year for major elements of the follow-up system or study which may include:
  - Administration
  - Materials
  - Indirect costs
  - Travel and ancillary personnel, such as consultants, etc.

Certain studies have undertaken the effort to determine procedures and/or costs associated with the conduct of a follow-up study of former students. One study which provides information related to establishing approximate costs for a one-stage follow-up survey of schools within a state is:

- Development of Sample Designs for the Follow-up of Vocational Education Students (Westat, Inc., 1977)

Baugh undertook an effort to identify costs for establishing a follow-up system at the postsecondary level.[88] The following information is a synopsis of his efforts.

Logically, follow-up systems or studies evolve from three stages: design and development, installation, and operation. The design and development phase includes those costs that might be considered as one-time costs. These costs include such things as original design of questionnaire and forms and original programming to collect and/or analyze data collected. In most instances, once installation costs have been incurred, additional implementation costs are not necessary. However, the implementation requires additional efforts, such as, formal reliability and validity assessments. In both the implementation and operational phases, one can categorize these costs. They include items, such as printing forms and questionnaires, purchasing supplies, changing of forms, questionnaires and computer programs, etc. Also, changing data requirements as defined at the local, state, or federal level may cause one to revert from an operational phase back to the design and development and installation phase. These procedural or process requirements will inherently affect costs.

Baugh conducted studies to determine costs of conducting an in-house survey, mailed out survey, and personal interview survey (telephone or personally visiting the individual). The focus was on the follow-up of the student and her/his employer. Variables considered in this analysis include:

- Salaries and benefits: These created a wide range of costs. Variance occurred because of assignment of personnel to either full-time or part-time status, and because of the type of person, such as a guidance counselor, teacher, principal, director of placement, secretarial or other clerical level person assigned the task.

- Printing capability: Having in-house capabilities or having to go outside affected costs.

- Computer expenses: In-house capabilities or having to go outside, and rental versus ownership of equipment affected costs.

- Postal costs.[89]

He concluded that volume alone can serve as a variable that affects costs. He also concluded that there is probably some optional number below which manual processing is cheaper than computer processing.[90] See Appendixes F through G for description of the various cost comparisons.

In another effort to ascertain costs, Jones identified the following cost factors for conducting a computerized follow-up study. These estimates were based on the use of existing personnel or cooperating with an area center for data processing services. The items in calculating expenditures included:

- Personnel, full-time, part-time
- Expendables, such as paper, stamps, envelopes
- Computer expenses, such as file maintenance, mailing program, required reports, storage per month (magnetic tapes), program storage[91]

One cost study which focused on the implementation and operation of both the graduate and nonreturning student surveys but excluded developmental costs, resulted in the following cost estimates.[92] (See Table 2, Appendix F) For a more detailed description of efforts for conducting a local assessment of follow-up costs, see:

- Follow-up Cost Study (SC5). TEX-SIS Student Information Student Follow-up, prepared for Division of Occupational Research and Development, Department of Occupational and Technical Education, Texas Education Agency. (R. C. Baugh, 1976)
- The Design and Implementation of a Model Placement and Follow-up Program in Sarasota County Florida. (J. Dale and C. A. Bellum, 1974)
- A Systems Approach to Placement and Follow-up: A Computer Model. (C. B. Jones, 1973)

Follow-up Studies and National Information and Data Systems

With the passage of the Education Amendments of 1976 (Public Law 94-482), three federally initiated data and information efforts were started. These included: The National Center for Educational Statistics' Vocational Education Data System (VEDS); the Departments of Labor and Health Welfare and Education's National Occupational Information Coordinating Committee (NOICC), and the NOICC counterpart in each state, the State Occupational Information Coordinating Committee (SOICC).

The VEDS has a proposed follow-up component which defines to be a minimum data base for state efforts in conducting follow-up. The NOICC and SOICC focus on occupational information for planning and programming which data from follow-up studies can be integrally related. Specifically, the identification of completers and jobs obtained, wages and salary, are types of elements that will be used to help build an NOICC and SOICC data base.

The Vocational Education Data System.* The following information was obtained from the VEDS Feasibility Report (May 1978). The VEDS system proposes to require states to collect follow-up data from former vocational education students and their employers. These include: Completer-Leaver Follow-up Form; Employer Follow-up Report.

The proposed former student follow-up forms would require the following data and information:

- Education status
- Employment status
- Employer, supervisor, job title, and job duties
- Job relatedness to training
- Current salary
- Hours employed per week

The student (high school, postsecondary, adult) Follow-up Report will be divided into four parts. Part A presents information on the employment status of the follow-up sample for each instructional program. Part B describes the employment status of the follow-up sample by racial/ethnic designation and sex. Part C describes the employment status of those individuals in the follow-up sample who are handicapped. Finally, Part D presents, for each program, the field of employment and average hourly salary of those individuals in the follow-up sample who were employed.

The Employer Follow-up Report will be divided into three parts. Part A summarizes the mean employer ratings by instructional program of the former student. Part B looks at the average ratings by racial/ethnic

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* Source: Vocational Education Data System (VEDS) Draft forms for release at the Annual Meeting of the American Vocational Information Association (AVIA), Oklahoma City, Oklahoma, May 22-24, 1978 and Wolfsberg, R. "VEDS Feasibility Study," presented at EPDA Inservice Workshop for State Planners/Evaluators. Oklahoma City, Oklahoma, March 28-30, 1978.

designation and sex of the former student. Finally, Part C presents average employer ratings by the level of the program and the completion status of the former students.

The VEDS data requirements for the follow-up of employers would include information obtained from the supervisor for the most current employment cited by each completer and leaver in the student sample. The specific data elements include:

- o Evaluation of technical skills (compared to others in the same work group)*
  - Job knowledge: technical information possessed
  - Readiness to learn new techniques on the job
  - Productivity, ability to meet quantity demands
  - Accuracy of work, quality and thoroughness
  - Did student require any on-the-job training
- o Evaluation of job readiness (compared to others in the same work group)*
  - Positive attitude toward work
  - Realistic concept of what job involves
  - Dependability, attendance, and punctuality
  - Initiative, does that job need doing
  - Ability to get along with others
  - Judgment, ability to make decisions, plan, organize

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* The employers would be asked to rate the individual on those data elements according to the following criteria:

A - Did not meet requirements
B - Usually met but rarely exceeded minimum requirements
C - Met and sometimes exceeded requirements
D - Exceeded requirements to an exceptional degree
E - Irrelevant or no opportunity to observe employee's performance

When are the former students to be followed-up for the VEDS reporting requirements? The proposed follow-up activities would be conducted in February of the appropriate fiscal year. Those former vocational students to be followed-up include completers and leavers of those programs of Part A of the program enrollment and termination report (enrollment will be counted upon official entrance into a vocational education program at the level at which a vocational objective can be state or implied). Only persons enrolled in a course, service, or activity uniquely and specifically associated with a six-digit program code will be reported here. No enrollment below the ninth grade will be reported. Also, it is limited to those programs covered by the State Plan. Furthermore, the universe is restricted to high school students, postsecondary students, and adult students enrolled in long-term programs (at least 500 contact hours in length).

Employer follow-up forms would be sent only to the employers of those students who indicated that they were employed (either civilian or military) in the student follow-up form (NCES 2404-5). Two forms of sampling are proposed in the VEDS follow-up component.

In the first sampling option, a state may elect to partition its school districts and postsecondary institutions (LEA/PSIs) into a maximum of five groups of LEA/PSIs. The state may then restrict its follow-up activities to one group of LEA/PSIs per year, rotating to the next group in the next year so that in, at most, a five-year cycle each LEA/PSI will have been included in the follow-up activities.

The adoption of this strategy is subject to the following restrictions:

1. Each group of local education agencies and postsecondary institutions (LEA/PSIs) must have approximately the same total number of "Part A enrollments." That is, if the state elects to partition its LEA/PSIs into five groups, then each group shall account for approximately 20 percent of the total "Part A enrollments."

2. In so far as possible under the constraint above, each group shall have approximately the same enrollments in each Part A program.

3. (IMPORTANT) Before any state could adopt this strategy (which allows for the follow-up of less than the total follow-up of universe in each year) that state must submit a technical sampling plan to NCES and receive approval in writing from NCES for that plan.

The sampling plan must contain the following:

a. A list of the LEA/PSIs in each group.

b. The total enrollment of each "Part A" program for each group for the most recent years.

c. Which group(s) is going to be followed up in which year(s).

d. A rationale for how the groups were determined.

e. A discussion of the degree to which each group is representative of the state.

4. The intent in permitting this extensive use of sampling is to reduce the cost and effort required to conduct the follow-up activities. The trade-off that NCES expects is that those states adopting a plan which includes less than the total universe each year will devote extra attention to obtaining quality data with acceptably high response rates.

The second form of sampling occurs with respect to those leavers who completed at most half (50 percent) of the program. Specifically, within the group of LEA/PSIs which is to be followed up in the current year, the following completers and leavers must be followed up:

1. All completers

2. All leavers who completed more than 50 percent of the program

3. Ten percent of the leavers who completed <u>at most</u> 50 percent of the program

National and State Occupational Information Coordination Committees.* With the establishment of the National Occupational Information Coordinating Committee (NOICC) and its counterpart, the State Occupational Information Coordinating Committee (SOICC), Congress intended to legislate a more integrated education and training system in the United States. Through the passage of the Education Amendments of 1976, Section 161(b), attention was drawn to the need to deal with data and information systems for and among

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* Source: Davis A. Portner, "NOICC/SOICC Goals and Objectives" (A presentation delivered at the State Occupational Orientation Session, Washington, D. C., 1977).

education and training programs. NOICC's charter, concisely stated, is to:

1. Improve communication and coordination

2. Develop and implement an occupational information system

With improved communication, it is anticipated that education and training planners, operators, and administrators will better understand the importance of occupational data and information, the value of such information, and how information can be most effectively used. In other words, there is a need to develop an understanding between and among the producers and users of data and information related to occupations.

The NOICC/SOICC network can become an effective tool in improving communication and coordination. The "bottom line" measures must be in terms of the impact on program structures. The NOICC/SOICC network see the elimination of duplicative survey activities in labor market or other substate areas, and an increase in the number of completers (of education and training programs) who find jobs in the local markets, then the network believes that they will have begun to achieve the congressional intent.

The second mandate is the development and implementation of an occupational information system. This system must go beyond the supply/demand information stage and incorporate wage or earnings data, information on training opportunities, information on career ladders and the myriad of other data and information needed by various users. As stated earlier, here is where the follow-up system or study, specifically interfaces with NOICC and SOICC; it can provide for many of those data elements or in validating certain data.

The position and/or function of SOICCs are still to be determined in many states; however, some of the technical areas that are and will be of concern to SOICCs include: program planning, curriculum design, data collection (including both administrative data systems and general purpose systems), program implementations, program evaluation, and follow-up.

In summary, the personnel at both the SEA and LEA level must be acquainted with the purposes, and operation of the National Information and Data Systems. As these systems are further developed and become fully operational the individuals responsible for conducting follow-up studies at the state and local levels should establish cooperative working relationships with those national systems to complement each others objectives.

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82. F. L. McKinney and C. Oglesby, Developing and Conducting Follow-up Studies, p. 23.

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86. D. J. Pucel, The Minnesota Vocational Follow-up System, p. 64.

87. M. Adams, J. B. Morton, and W. D. Frazier, Parallel Follow-up, p. 7.

88. R. C. Baugh, Follow-up Cost Study (SC5), Tex-SIS Student Information System-Student Follow-up (Austin, Texas: Division of Occupational Research and Development, Texas Education Agency, 1976), pp. 6-11.

89. Ibid., p. 7.

90. Ibid., p. 10.

91. C. B. Jones, A Systems Approach to Placement and Follow-up: A Computer Model (Austin, Texas: Bryan Independent School District, 1973), p. 22.

92. D. Hood, Model for Institutional Student Flow and Follow-up (SC7) (Austin, Texas: Texas Education Agency; Western Texas College, August 1976), p. 29.

93. Wolfsberg, R., "VEDS Feasibility Study," a paper presented at the EPDA In-Source Workshop for State Planners/ Evaluators. Oklahoma City, Oklahoma, March 28-30, 1978.

SECTION 5

DATA ANALYSIS AND REPORTING PROCEDURES

SECTION FIVE

DATA ANALYSIS AND REPORTING PROCEDURES

The reporting of follow-up information is a requirement made by the federal government in the Education Amendments of 1976 (P.L. 94-482). Each state receiving federal vocational education money must conduct follow-up studies. At the state level, it is recommended that statistically valid sampling techniques be used. A survey of all the graduates is recommended for the local education agencies.

At a minimum, the states must report the results of the follow-up studies to the federal government on approved forms. In addition, the states and LEAs may report the findings in a variety of forms depending upon the user they may wish to reach. The users could be:

- o General public/community
- o Educational planners at local and state levels
- o Educational administrators at local and state level
- o Selected audiences, such as, the state or local education board and craft advisory committees

Each of these audiences has different needs. The public/community does not generally require a detailed report. A one-to-three page report highlighting the results of the follow-up may be sufficient. Educational administrators and selected audiences may only be interested in a one-page executive summary and a list of the conclusions and implications. Educational planners, by contrast, will need a detailed report so they can recommend educational program changes, etc.

Conceivably, then, there are types of reports for presenting follow-up data and information:

1. Highlight report for:

   a. general public
   b. selected audiences

2. Executive summary for:

   a. educational administrators
   b. advisory council for vocational education

3. Detailed report for:

   a. educational planners
   b. classroom/laboratory instructors
   c. counselors/placement personnel
   d. other interested persons

4. Federal report for

   a. United States Office of Education
   b. State administrators/planners

The federal report is required; the other three are optional.

In preparing a report on a follow-up study of former vocational students, a common mistake is making the same report for all potential audiences. It is not uncommon for a LEA or SEA to distribute 500 to 1,000 copies of a report with fifty or more pages. This practice is costly and sometimes of questionable value. The general public is probably confused by the sheer mass of information. The administrator may never read the report; she or he simply does not have the time to review the entire contents to determine policy action or program decisions. Only the educational planner, classroom/laboratory instructor, counselor/placement personnel need to know all the details.

A related consideration is the length of the report prepared for a specific audience or individual decision-maker. In a study of evaluation data needed by educational decision-makers, Brickell found that it was common place for a decision-maker to ask for a short report for himself/herself and a longer one for a subordinate.[94] Brickell states, "In keeping with this pattern, top officials and management staff were more likely to ask for short reports; program and project specialists were more likely to request medium or long reports in their areas of specialization."[95] Further, he concluded that differentiated responsibilities required differing lengths of reports, despite the preference for brevity. Proposed length of reports for decision-makers were: Short (1 page - three minutes), medium (10 pages - fifteen minutes), long (100 pages - sixty minutes).[96]

The alternative follow-up study reports must be weighed in terms of the targeted reading audience. At the state level, all four reports should be prepared.

If the state conducts the follow-up on all graduates, it should also prepare statistical reports for each of the LEAs. At the local level, the detailed report and the executive summary should be prepared as a minimum.

One example of effective reporting of results on a follow-up study of high school dropouts is found in Appendix K. This brochure, prepared by the Division of Administrative and Survey Research Services/Office of Research and Evaluation, the Philadelphia School District, Philadelphia, Pennsylvania, received the award for the "Best evaluation report brochure." This competition was sponsored by the American Educational Research Association, 1977, Division H, Evaluation.

Organizing and Formating the Report

Organization and format of the follow-up report is governed by the type of report which is to be prepared. The detailed report should contain:

1. Summary (one to two pages)
    a. Purpose
    b. Procedure
    c. Results, conclusions, and recommendations
2. Economic environment and labor force trends
3. Results
4. Conclusions
5. Implications for: policymaking and decision-making for program improvement and development
6. Appendixes
    a. Procedure - data collection, data analysis
    b. Returns: Return rates by programs, type of school, geographic region
    c. Limitations
    d. Data tables
    e. Copy of survey instrument(s)

It is evident from the above outline that the traditional research outline is not recommended. Rather, the report is organized for the reader's convenience.

The summary is intended to convey, in a capsule form, what the report is about and its major results, conclusions, and implications. Often this is all an administrator needs to know to determine if action is necessary. Importantly, the "busy" reader can obtain specific directions from the summary. She/he can determine if the contents are relevant to her/his needs.

The "economic environment and labor force trends" section is essential. A critical outcome in a follow-up is to determine if the former vocational students found jobs related to their field of study. A high unemployment rate can have a direct effect on the success of graduates findings jobs. Other labor force trends, such as union requirements for entry into apprenticeship occupations, could be discussed. For example, unions and/or companies may require workers to bid on openings for apprenticeships based on seniority. A machinist program graduate may have no alternative but to take a job as a material handler until she/he has accumulated enough seniority to bid for an apprenticeship opening. On the surface, the graduate may be working in a job unrelated to her/his training. Thus, it should be pointed out that union/employer requirements can, and often do, prevent a graduate from getting a job initially after completion of her/his schooling that is related to the training provided.

Perhaps the most important consideration in drawing conclusions and recommendations from the results of a mailed questionnaire is return rate. A low return rate from a nonrepresentative sample prevents one from making valid generalizations. Before drawing valid conclusions, it is necessary to compare information from a sample of nonrespondents. Otherwise, the results, conclusions, and recommendations could be considered to be biased.

Assuming an adequate response rate and one which is representative of the population, valid generalizations can be made. The listing of conclusions can take various forms. A popular way is to summarize major conclusions, such as:

- The most successful programs in terms of graduates finding work related to their training were . . .
- Regardless of geographic location, graduates from the . . . program had the highest unemployment rate.
- The majority of the former students from . . . program continued their education/training.

These major conclusions are important. However, they are most appropriately placed in a highlight report or on a separate page at the beginning of the report titled: "Highlights on the Class of 19--."

Technically, conclusions are inferred or deduced from the findings or results. Specifically, two or more results are reached based on deductive or inferential reasoning. A number of examples may clarify the point.

1. Deduction--conclusion follows from the premises.

   a. Two percent of civil technology program graduates from the community colleges were unemployed according to the survey results.

   b. Seventeen percent of the graduates from private technical colleges from the same program were unemployed.

   c. The civil technology programs of the community colleges do a better job in preparing students for a job than those in the private technical colleges.

2. Inference - conclusion does not logically follow from the premises but cannot be contradicted by other information.

   a. Students who were enrolled in occupational programs which were their third choice all marked that they received poor course preparation for their present job.

   b. Those same students also said they got jobs unrelated to their previous course work.

   c. To place a student into a program which was his/her third choice is a misuse of both the student's time and the school's resources.

In the first instance, the conclusion follows logically from the findings on graduates from the two different types of colleges. On the other hand, the inferred conclusion does not follow logically from the first two findings. An assumption is made in deriving the conclusion. It does not necessarily follow that this is true for all students who originally entered a program which was their third choice. The conclusion also contains a value judgment--training which will not be used is wasteful. Yet, given the premises, the conclusion does not appear to be disputable.

In contrast to conclusions, recommendations do not seek to determine general relationships between two or more findings. Rather, a recommendation is directly deductible from a conclusion and/or finding with one important difference. A recommendation--based on the findings and conclusions--addresses itself to answering the question, "What should be done to change the future in a desirable direction?" A report which contains recommendations leaves the realm of describing a population, events, or relationships and enters the decision-making process. Recommendations offer alternative policies, decisions, or actions designed to alter the present and/or future. For example, the recommendation directly related to the conclusion "to place a student into a program which was his/her third choice is a misuse of the student's time and the school's resources" could be:

> The AVTs should develop a policy that no student shall be enrolled in a program which was not his/her first or second choice.

The recommendation addresses itself to the conclusion. It is directly deductible from the conclusion. Further, it answers the question "What could be done to change the future?" It does however, assume that a desirable future will be attained by implementing a policy. The decision on the possible impact, such as policy, will have to be made by administrators.

Basically, the conclusions and recommendations are the most important part of a follow-up report. Everything else (mailing the questionnaire, analyzing the data, etc.) are all for the purpose of being able to draw conclusions and to develop recommendations. This section is where the reporter(s) can "bring it all together" and point out what all the displayed information means. Unfortunately, conclusions and recommendations can only be made after all the other work is completed.

Sometimes the conclusions and recommendations section is the weakest part of a report. This may be because enthusiasm felt by those involved is highest at the beginning of a project and slowly fades as work progresses. By the time the writing of the conclusions and recommendations is begun, pressure to complete the task builds. One way of overcoming this problem is to define a frame of reference or conclusions and recommendations process throughout. During the analysis of the data, conclusions often come to mind. Similarly, recommendations may appear obvious during the interpretation of data or writing of the final report.

In summary, the validity of conclusions and recommendations is governed by the quality of the original data. If the response rate of a mailed questionnaire is low and non-representative, it may not be possible to make valid generalizations. Conclusions are inferred or deduced directly from findings and seek to determine the general relationship between two or more findings. Recommendations, by contrast, are directly deductible from a finding or conclusion and propose alternative policies, decisions, or actions.

The procedure, discussion of returns, limitations, etc. are included in the Appendix so that they do not get in the way of the most important information--the results, conclusions, and implications. Using this format generally satisfies the needs of four audiences, the busy executive, the educational planner, the instructor, and those who may need to conduct a similar study at another time or place.

A Highlights Report and Executive Summary.

The highlights report is designed to convey general information to the community on the graduates. Typically, these two-to-three page reports present a profile of the graduate. Both general information and findings from the follow-up study could be included such as:

1. Number of vocational/occupational graduates as a percent of all graduates
2. Number of graduates by the seven general program areas
3. Proportion of the graduates who responded to the survey
4. Proportion of graduates by program who continued their education and/or found work related to their training
5. Demographic information on the graduates
6. Photo-reduced graphs, charts, and tables included in the detailed follow-up study report

At the state level, the highlights or profile report could be enlarged to reach a larger reading audience. Such a mini-report could be four-to-eight pages long. In addition to information included in a highlights report, the mini-report could contain:

1. A map illustrating the distribution of the graduates

2. The state goals/priorities of vocational education

3. Major accomplishments to date to meet the goals/priorities

4. List of major conclusions and recommendations

The organization and format of the executive summary is based on the information included in the detailed report. It consists of:

1. Cover page

   a. Title of report
   b. Short summary specifying what the report is about (twenty-to-twenty-five words)
   c. Author(s) and data

2. The one-to-two page summary included in the detailed report

3. Recommendations for alternative actions

Recommendations included in the executive summary need not come from the detailed report. They may be the recommendations from the department heads or other personnel. The executive summary should be organized to answer the following questions:

1. What did you do?

2. What did you find out?

3. What does it mean in terms of the way we are doing things?

4. What actions could we take to make needed changes?

The suggested organization and format for the detailed report, executive summary and highlights report may need to be altered depending on local needs. The important point to remember is: design the report for the convenience of the reader. A report which is organized for the reader's convenience has a better chance of being read. No one report can meet the needs of all readers. Once the detailed report is completed, the executive summary and highlight reports are easy to prepare. The additional work required to complete these reports can easily be justified. Also, the required number of copies of the detailed report can be reduced and reproductive expenses thus lowered, and dissemination can be increased.

Graphic Presentations

The use of graphs and charts to display the relationships between two or more variables has many advantages. From the reader's perspective, graphs illustrate similarities, differences, and trends quickly. However, when using graphics some details may be lost. On the other hand, often minor details only serve to draw attention from or confuse the main issues. For example, compare the information in Table 1 on enrollment trends with the same information displayed using the graph--Figure 1. The most obvious problem with the table relates to the columns of numbers which must be examined at some length before the trends and shifts become apparent. Figure 5-1 by contrast, points out all the varying shifts in one glance.

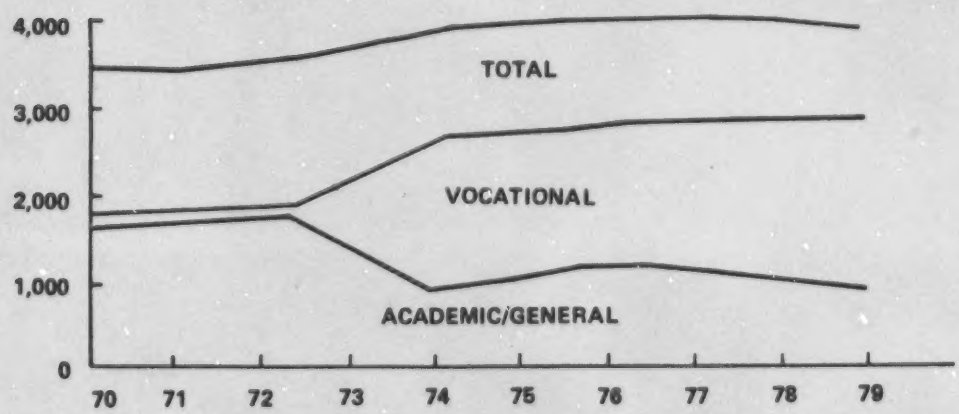
Table 1

10th-12th Grade Enrollments by Program for

***ABC* School District: 19--/19-**

Year	Total	Academic/General	Vocational
1970	3,511	1,809	1,702
1971	3,436	1,819	1,617
1972	3,572	1,763	1,809
1973	3,659	1,461	2,198
1974	3,713	1,090	2,623
1975	3,958	1,253	2,705
1976	4,063	1,244	2,819
1977	4,017	1,231	2,786
1978	3,986	1,196	2,790
1979	3,801	1,017	2,784

Figure 5-1
10th-12th Grade Enrollments by Program 19__/19__



Given only Table 1, the reader must make many interpretations before these trends become apparent. The problem is, most readers will not take the time to do so. The table may even have the effect of causing the readers to skip over the entire discussion on enrollment trends. Clearly, the chart clarifies rather than confuses the central issues. It may even stimulate the reader to hear your explanation for the sharp increase in vocational education enrollments between 1972 and 1974.

Graphics have the added advantage of providing visual relief from pages filled with words. However, if improperly used, graphics can confuse and even say nothing. A chart which tries to communicate too much information may have the effect of missing the important points. If, for instance, the information in Figure 5-1 were expanded to show the change in enrollments over time by program and sex, the added lines would detract from the overall trends. A cursory comparison of Figures 5-1 and 5-2 indicates the truth of the rule "too much information is virtually no information." The same reservations are applicable to graphs. Figure 5-3 contains information on the range of salaries earned by the high school graduates. The graph conveys the information clearly and concisely. Similarly, Figure 5-4 is clear. But it adds one more dimension (sex) which is relevant for determining equal opportunity.

A series of graphs which are all variations of the same type can become boring. The information could just as easily have been displayed in a fashion similar to that seen in Figure 5-5, with one important exception. Figure 5-5 illustrates large differences in the sex of graduates from the seven vocational programs. If the information contained in Figure 5-4 were displayed in the format of Figure 5-5, it would not show any marked differences by sex.

If a graph or chart does not point out differences, it probably should not be used. Graphics used merely for display are inappropriate. Once the reader gets an impression that your graphics say nothing, he/she may ignore them altogether throughout the remainder of the report.

FIGURE 5-2

10TH–12TH GRADE ENROLLMENTS BY PROGRAM 19—/19—

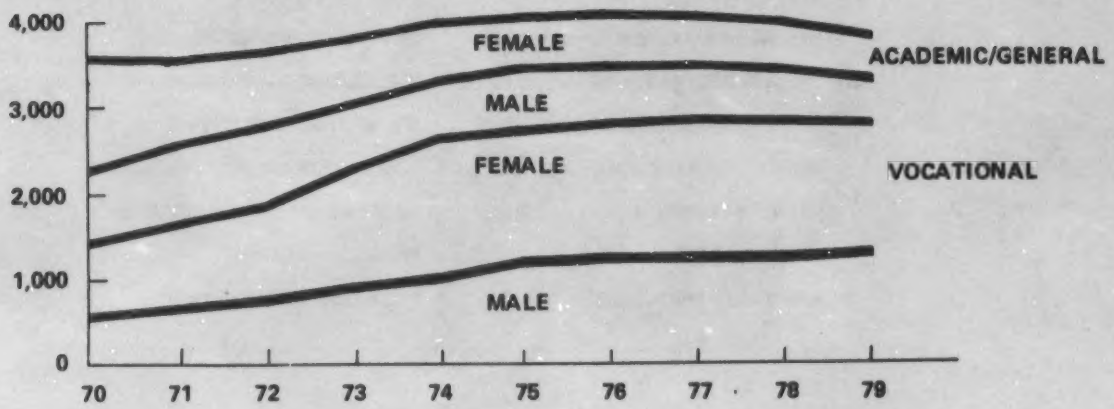


FIGURE 5-3

MONTHLY SALARY OF EMPLOYED VOCATIONAL PROGRAM GRADUATES

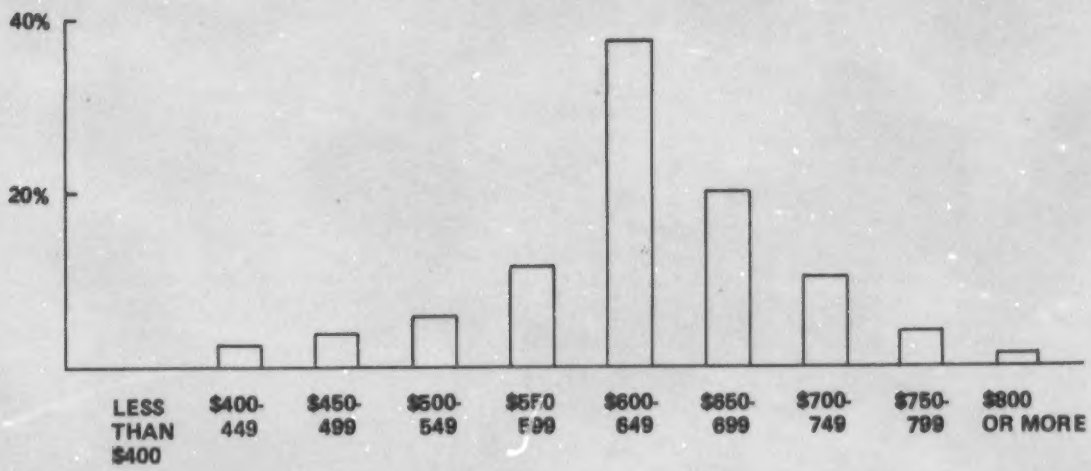


FIGURE 5-4

19— GRADUATE
FOLLOW-UP RETURNS BY PROGRAM AND SEX

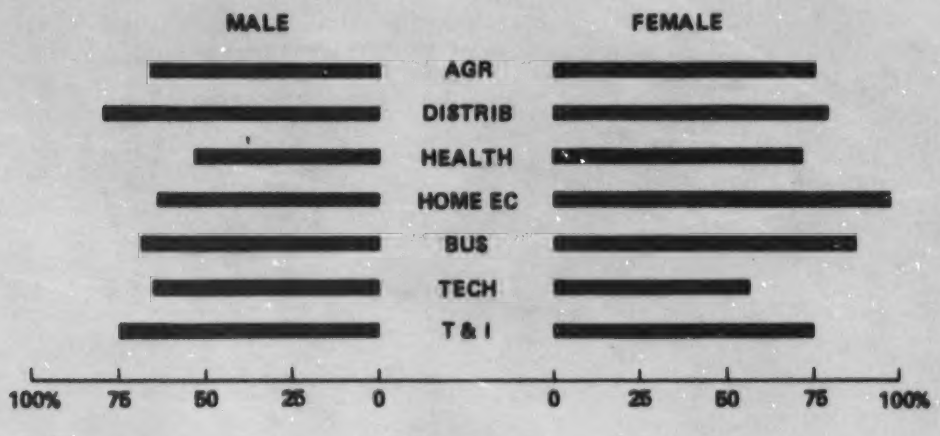
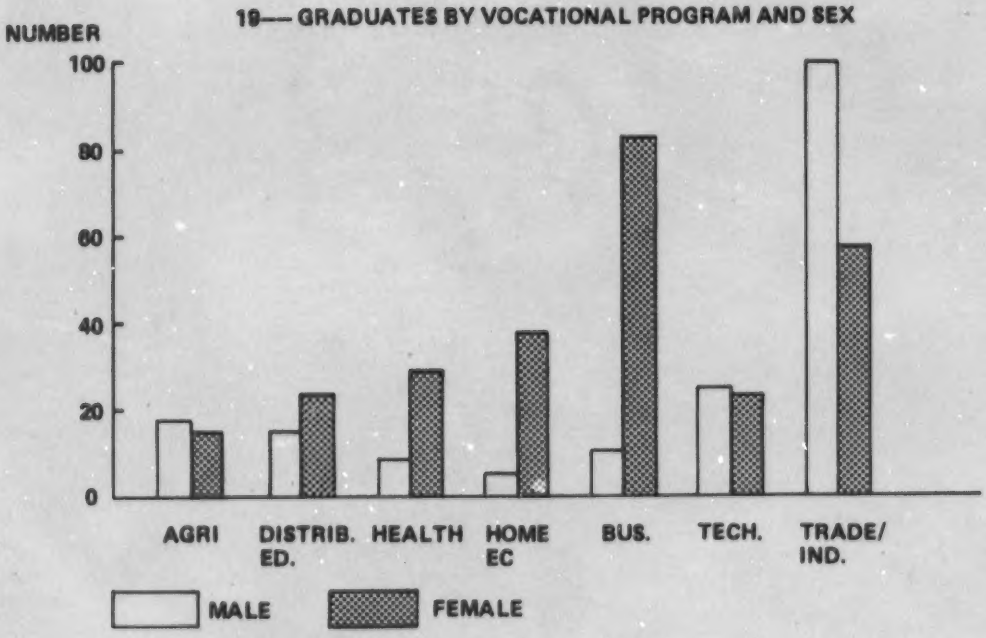


FIGURE 5.5

19— GRADUATES BY VOCATIONAL PROGRAM AND SEX

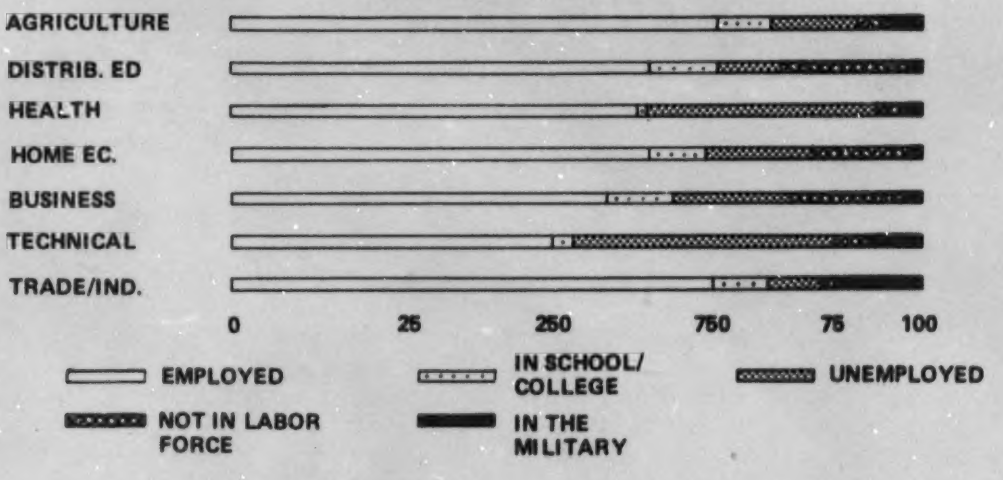


Sometimes it is difficult to avoid preparing a graph packed with information. A complex graph may be appropriate, especially when it is difficult to describe a series of relationships using narrative text. Figure 5-6 is a graph which represents a series of relationships. Yet, this one display gives a wealth of relevant information. The post high school activities of the graduates by program can be compared easily and quickly.

Major similarities and differences stand out. A narrative description of these similarities and differences is enhanced by the graph. The reader can verify written statements. Most important, the information is condensed into an understandable form.

FIGURE 5-6

POST HIGH SCHOOL ACTIVITIES
OF THE 19__ GRADUATES



The use of color in graphic displays can be a valuable addition. But, too many colors, like too much information, can detract from the effectiveness of a graphic presentation. Also, the use of colors in printing is very expensive.

Maps are also useful for showing geographic relationships. At the state level, a map showing the relationships between counties can be revealing. A local LEA may be able to discern differences by the townships included in its area.

Basically, graphs and charts can be a valuable way of showing relationships between two or more variables. They can be used successfully to present complex information. Often graphics increase the readability of a report. But, they should be used judiciously. After a graphic display is completed, it should be examined carefully with the following questions in mind:

1. Does it say something?
2. Does it display the relationship clearly?
3. Could it be displayed differently?
4. Does it have eye appeal?

Figure 5-7 identifies major factors in organizing and formating a report, and considerations in graphic display of data.

Guidelines for Interpreting Data

The information gathered through a follow-up of graduates commonly follows a basic process: the data are analyzed using descriptive statistics, such as means, medians, percents. Reader interpretation of these data should not be complicated. Unfortunately, this is not always the case. As noted earlier, the questions should be analyzed to determine if they asked for:

1. Objective information or subjective information
2. Opinion or attitude responses
3. Retrospective or current responses

Interpretation of opinion, attitude, or subjective responses is difficult because there is no way of determining the responders' mood when the questions were answered. Similarly, there is no way of checking the responders' ability to accurately recall the past.

Assuming only factual information items were included on the survey form, a number of problems may still exist. Perhaps most critical to vocational education are the responses to questions on how related the graduates' postschool activity is to the previous school occupational course. According to the 1976 Educational Amendments, a student is in a related field if he/she is continuing education or working in a job related to previous course work. By implication, the educational institution may be faulted because the graduates:

Figure 5-7

Factors to Consider in Preparing Follow-up Reports

1. Include the survey instruments in all reports and presentations, if possible.
2. Set up local reports based upon local requirements, but also include information required by state and federal mandates that relates to local programs receiving state and federal support.
3. Break out and analyze data as much as possible, but not all information and analyses need be presented to everyone.
4. Make tabular summaries in the shortest possible form. Oral presentations are best with this type of information. Follow survey form design when making presentation, question 1, 2, 3, etc.
5. Prepare and present a copy of the report for each member of the audience during oral presentations, if practical. Be sure to present data in the form and content applicable to the particular audience.
6. Summarized reports are usually the best format for presentation to most groups, however, more definitive information is required in certain instances.
7. The comments section of a survey instrument is very important. This area many times reveals needs and shortcomings, especially if a particular comment is repeated several times.
8. Scan the comments section for the most frequently mentioned items, and make summaries for inclusion in reports and presentations. Refrain from using actual names (teachers, administrators, etc.) given in comments.
9. Do not attempt to include survey information from a student surveyed in the wrong curriculum area. For example, students are sometimes included in vocational surveys that may have only taken one vocational course, and are in fact pursuing college prep courses. Their inclusion in a vocational survey biases the information and increases response error.
10. Data tabulation and analysis methods must be appropriate, or non-use of the data is assured.
11. Break out district data on a per school or program per campus basis. Most administrators are interested in information about their institution and their graduates. Compare schools to county data, or program to program data, but avoid institution to institution comparisons.
12. Break out data by program, where applicable. This format is very meaningful for vocational reports and presentations. It gains teacher support for the activity.
13. Compare and present data on courses and programs, not teachers. Many students react to questions about courses or programs by the nature of her/his relationship with a teacher, which biases the data.
14. Keep any sophisticated statistics in a separate section for those who wish to review them, but do not present statistics throughout a report. Rates of use will go down, especially in audiences with little or no background in research methodology.
15. Percentages, graphs and charts are information display methods to which most populations can best relate.
16. The main use of follow-up information as it currently exists is to display general indications of the condition of an institution, district, etc. Include an abstract of each report that summarizes these findings and gives a brief description of the information gathering analysis techniques.
17. Make sure reports appear neat, are printed on good quality paper, and are in readable form.

1. Never planned to work in that field

2. Never planned to enter the labor force

3. Entered the military

4. Did not learn enough to qualify for a job in that field

5. Took the first job that came along

In addition, consider these questions: Suppose the school could not give the student her/his first choice of occupational training. Should the school be faulted because only the student's second choice was available?

From the above discussion, it can be seen that the data must be interpreted in segments. A separate analysis should be presented of those students who received their first choice of occupational courses and those who did not. The comparison of these two groups will provide necessary information for future placement of students into occupational courses. Before determining the proportion of former students who entered related fields, those students who never planned to enter the labor force should be subtracted from the total. Former students should be considered in a related field who said their present status was:

1. In college full-time (in related program of study)

2. In school full-time (in related program of study)

3. In the military (in related program of study)

4. In the same occupation as course work

5. In a highly related occupation to course work

This reduces the problem to: What should be done with those former students who did not acquire sufficient skills to qualify for a job in that field or with those who took the first job that came along? These students should be totaled separately from those graduates who found work either slightly related or unrelated to their previous occupational courses because they:

1. Tried but could not find a job in the field

2. Discovered the pay was too low

3. Decided they did not like the work

4. Learned there was too little opportunity for advancement

5. Decided they did not like the working conditions

6. Were not accepted in the apprentice program

7. Gave some other response

Partitioning the information in the manner suggested above presents a realistic account of the postschool activities of former students. It has the further advantage of isolating those students who had enrolled in an occupational program which was their second or third choice. Counselors can also determine what proportion of the students would probably benefit by getting detailed information on working conditions, pay ranges, etc. for prospective occupations.

Data interpretation must also take into consideration economic and labor force trends. A major labor strike just prior to the mailing of the survey can have a large effect on the former students' working status, to say nothing of their attitudes and opinions. Similarly, the results of the survey may not be comparable for two different years if there was a change in the area's rate of unemployment. However, less drastic labor force developments could also determine how successful former students are in finding related jobs. A company which had been responsible for hiring all the capable former students from a particular program could lose a contract and redesign the factory for a different product requiring only unskilled workers. Such a change might not be apparent to the data analyst. These occurrences, however, can often be detected by comparing the results of the follow-up study with the results of previous studies.

Before interpreting data, it is necessary to ascertain the type of questions which were asked. If they were factual questions, the responses can be interpreted carefully. To a large extent, the interpretation of data is also governed by definitions and assumptions. These must be stated clearly. Finally, the results must be analyzed in the context of economic and labor force developments to determine if external factors influenced the results.

Computer Applications in Follow-up Studies

Many educational institutions now use the computer to store, retrieve, and analyze information. The usual method at the state level is to analyze the results of a follow-up by computer because of the size of the date base. Depending on the size of the graduating class, an educational agency may decide to convert the data analysis from hand tabulation to automatic processing. The most obvious question is--which of the many alternatives is most appropriate? The alternatives could be:

1. Develop a unique data storage, retrieval and analysis system
2. Alter an existing system to fit local specifications
3. Adopt a complete existing system
4. Contract with another agency to analyze data using existing systems
5. Rent computer time and analyze data using a generalized data management system

The states which conduct annual follow-up studies have generally developed a data storage, retrieval and analysis system. Some states have a computerized student accounting system and the follow-up system which is a logical extension of the accounting system. The advantage of having a comprehensive student accounting system is that personal and certain status information on each student can be gathered while the student is still in school. The follow-up survey is used only to get information not already available. The disadvantages relate to the large costs involved in developing and maintaining a comprehensive computerized accounting system. A less costly alternative is to alter an existing system to fit local specifications. This eliminates many of the costs usually associated with designing and developing a system.

A local education agency, after examining existing computerized follow-up systems, may decide that a system already in existence meets their requirements. Often, such systems' specifications and related programs can be procured for a nominal cost.

The disadvantages of the first three alternatives are that the educational agency must maintain the costs of:

a. All computer peripheral equipment and a physical facility

b. Systems analysts and programmers

c. Data processors

By contrast, contracting with another agency to process and analyze follow-up data using its existing system eliminates the need to invest in equipment and additional personnel. Contracts of this type can be very reasonable, especially if the contracted agency is a State Department of Education or a local public educational agency. The only disadvantage relates to being interlocked with a system. If it is altered, the system may no longer meet the needs of the contracting agency.

By far, the most flexible alternative is to rent computer time and analyze the data using a generalized data management system. It also tends to be the least costly alternative. Any educational agency located within a certain distance of a computer installation which has a data management or generalized statistical package associated with it can choose this alternative. The flexibility of generalized computer packages such as Statistical Package for Social Sciences (SPSS), MARK IV and the like make them particularly suitable for data analysis. They have the capability of providing both descriptive and inferential statistics and information. It is easy to learn how to work with such generalized systems. Often an existing member of the staff can be used and no programmer or systems analyst needs to be hired. Also, if there is a change in the type of information required, there is no need to make extensive program alterations.

In summary, computers can be used successfully to help in collecting, storing, retrieving and analyzing follow-up information. There are a number of alternative computer applications. Obviously, the decision to choose an alternative is based on a number of factors, such as size of the data base, intended use of data or information and the frequency of need for information. The most expensive alternative is to develop a unique system which is housed and maintained by the educational agency. The least expensive and flexible alternative is to rent computer time and analyze the data using various generalized systems.

Notes to Section 5

94. H. M. Brickell, C. B. Aslanian, and L. J. Spak, Data for Decisions: An Analysis of Evaluation Data Needed by Decision-Makers in Educational Programs (New York: Policy Studies in Education, March 1974).

95. Ibid.

96. Ibid., p. 99.

SECTION 6

USING FOLLOW-UP DATA AND STUDIES

SECTION SIX

USING FOLLOW-UP DATA AND STUDIES

In section 2, the rationale for doing follow-up studies was discussed. Although it is not necessary to reiterate the rationale here, the reader should bear in mind that follow-up studies are a type of summative evaluation activity. The information gleaned from the follow-up studies should aid in decision making.

Thus, the results of a follow-up study can be used for a large variety of purposes. Within the educational agency, the report provides a base for making decisions regarding such areas as programs, services, and equipment. For those not directly connected with the educational agency, the follow-up results are an account of the school's success in preparing students for work. Because the audiences for the follow-up study differ and because follow-up information is used in different ways, each audience should receive a report that is tailored to its needs as discussed in section 5. Basic factors to be considered in the use and definition of the applicability of follow-up data are found in figure 6-1.

Follow-up studies are primarily status reports. An assumption is that the status of a group of graduates in the future will be similar to a previous group unless changes are made. In deciding which changes to make, the conclusions and recommendations included in the report are examined first. Those persons directly connected with the educational agency should determine if the recommendations relate to:

1. Policy (e.g., program focus in regard to students and community/labor market)
2. Staff (e.g., in-service training on new instructional materials)
3. Services (e.g., student selection of a program)
4. Programs (e.g., modify to reflect new skill requirements)
5. Equipment (e.g., buy machinery in current use by industry)

Figure 6-1

Considerations in the Use and Applicability of Follow-up Data

1. Change usually takes place on the school and classroom levels. All personnel who might be affected by anticipated changes should be involved in the design of follow-up studies.

2. Follow-up information can be used to substantiate quality programs and positive situations. It should not be viewed solely as a program designed to reveal weaknesses.

3. Follow-up information tends to reveal what kind of courses and programs students should not be trained in. It cannot always reveal what alternative courses should be offered.

4. While data from the follow-up process can be used to assess teacher effectiveness, it must be remembered that students often tend to rate courses according to their feelings about the teachers. Teachers rated low may be excellent teachers.

5. Follow-up data many times provide the impetus for change but should rarely be the sole cause of or basis for change. Information must be gathered from as many sources as possible before action is taken.

6. Studies may indicate certain areas of concern, but many times there is no follow-through on them. It is the job of the appropriate administrator to use the information to make needed changes.

7. Some administrators and teachers are not convinced of the benefits of using follow-up data. These benefits must be revealed if the information is to be used effectively.

8. Some administrators and teachers feel threatened by the revealing look at the conditions in their institutions provided by follow-up studies. This threat must be minimized to ensure the best use of the data.

9. Follow-up is a slow process: it may take several years for significant trends in follow-up data to appear. If a significant trend or point in the data appears to emerge, it should be checked against information from as many sources as possible.

Policy changes can have far-reaching consequences. As such, they can only be made by top-level administrators in conjunction with school boards. Other decisions may not effect policy or the budget. However, such decisions should involve those directly influenced by the change. If a suggested change is related to curriculum content, then only the craft advisory committee, instructor(s), and curriculum coordinator should decide on the change.

For those not directly connected with the educational agency, the follow-up report can also be used to influence decisions. But they have little or no authority to implement changes. As such, persons or groups outside the educational agency can only suggest that certain decisions be made. Perhaps the greatest impact a follow-up study has on persons outside the educational agency is on attitude. The public's attitude is directly related to how well it thinks the school/college prepares students. Certainly, one of the most significant uses that the public can make of follow-up is to use it to help determine the quality of the programs. And this finding can be the basis for its decision to provide or withold financial support for the educational program and/or agency.

Follow-up and the Mangement Information System (MIS)

Two of the process objectives of a vocational education management information system include the collecting and developing of a comprehensive data file. A critical subsystem is the follow-up of former vocational students. This subsystem provides data feedback which can be analyzed to support the decision-making process. The extent to which a management information system supports the decision-making process is the key to determining that system's effectiveness.

One advantage of an MIS is the level of detailed information available on the individual student and/or program. Combining the information collected by a follow-up study with other evaluation data provides a basis for a detailed analysis to identify problem areas and probable causes. For example, the data analysis might reveal the following information about a student:

1. A low grade point average
2. Excessive absenteeism the last two years of school
3. Social problems in school and/or on the job
4. Dissatisfaction with school program and/or the present job

Since all sections of the system can be made to interact with each other, many advantages are realized. The MIS permits a decision maker to ask questions about the probable effect that a decision or a series of decisions related to one subsystem can have on the other subsystems. Thus, if it is tentatively decided that a number of different students with certain characteristics are to receive individualized training and group counseling on occupational mobility, the possible implications in terms of facility, space, extra cost, and added personnel could be determined.

When viewed from this prospective, follow-up information is a feedback component of an MIS. It provides information on the output (graduate) of the educational agency. Possible causes of undesirable outputs can be isolated. The proposed changes in inputs (instruction, services, etc.) can be analyzed to determine the potential effect the changes could have. As such, the MIS is a dynamic management tool for analyzing the need for decisions and the probable effect those decisions can have on the local educational agency.

Using Follow-up Information for Planning and Program Changes

Extensive planning and decision making are crucial to the success of vocational education. An array of complex variables must be considered when designing programs for a comprehensive vocational education delivery system. Comprehensive planning requires data collection from several agencies, including vital information collected through follow-up programs.

It may be noted by their similarities that decision making and planning are heavily interdependent, if not inseparable. Each requires objective data from which to draw conclusions and base inferences. The magnitude of this situation cannot be over-emphasized to those confronted with alternatives, because decisions, regardless of their magnitude, must be formulated with a certain amount of information in mind. Planning and decision making carried out on intuition alone can often lead to undesirable or even disastrous outcomes.

Determining educational policy decisions is a formidable task. It is evident that issues, however they are defined, are complicated and important. A cursory examination of almost any educational decision reveals a mind-boggling complex of inter-relationships and variables. Everything, it sometimes seems, is related to everything else.

Educational planning and decision making are extremely complex on any level. One must attempt to exclude data, suppress some interaction, ignore certain variables, and focus attention on the exact problem, while simultaneously considering the outcomes.

Decisions regarding alternative approaches, positions, or procedures all require that objective information be available so that a basis for action or nonaction can be maintained. The decisions to expand, reduce, or eliminate a program, for example, can only be effectively pursued when data are present for comparison and analysis. Accordingly, data utilization of this nature not only aids those making decisions, but its use justifies the decisions to other individuals.

Follow-up data, which provide measures of limitations, parameters, and resources, are essential to the establishment and assessment of goals and objectives, which are logical concommitants to effective planning and decision making. Administrators cannot develop and institute such items as comprehensive plans, capital outlay budgets, federal funding guide requests, school plant needs assessments, and curriculum guides, without an extensive data base, generated in part by a vigorous follow-up program. Moreover, the judicious planning of program or course objectives and teaching strategies is at best tenuous when teachers do not have objective follow-up data at their disposal.

So, there are innumerable factors, components, elements, and variables associated with the change process. The preceding brief discussion of planning and decision making attempts to portray the complex nature of educational change that must be considered by educational planners. The utilization of follow-up data to effect change is merely one segment of the total process of change, but should never be underestimated as a crucial component for assessing the needs and relevance of vocational programs.

It appears that no magical formulas or hard and fast rules for successful use of follow-up information currently exist. It seems that those who both generate and use follow-up data find it difficult to translate their successes into exact procedures for others to emulate.

However, the following actual examples were drawn directly from the field and may be considered valid instances where follow-up data were employed by decision makers. These examples were selected as representative of the many types of change occurring within the schools and may possibly be considered as "typical." Current use of follow-up information

is typically situational, and instances described in the following paragraphs may pertain to programs or components available only in certain institutions or school districts.

Example 1. Information from annual vocational employer surveys in a large school district revealed that employers frequently commented that graduates lacked essential employability skills. A closer look indicated that some students did not know how to properly fill out an employment application, conduct themselves in a job interview, or keep a job once they found one.

The vocational director, other administrators, and occupational specialists met and formulated a plan to better prepare students for entering into the job market. In several large high schools, "employability skills" is now offered as a separate course on the ninth or tenth grade level. Furthermore, every high school, regardless of size, instituted a unit of employability skills in certain academic and all vocational classes. These units are taught by both occupational specialists and/or vocational teachers, depending upon the situation. The program has met with favorable comment from employers and students, and recent survey data have tended to substantiate the changes.

Example 2. Employer surveys from a small community college revealed that some graduates of business programs were failing the minimum typing performance standards required in certain occupations. The head of the business department checked all typing programs and noted that testing procedures for typing speed and accuracy were not consistent with those used in business and industry. The word-per-minute rates were somewhat higher in the employer's classroom tests, and consequently some students failed the minimum performance standards demanded in certain job situations.

Consultations were held between the business staff members and individuals from government, business, and industry to develop guidelines and procedures for teaching and testing typing skills to match those often required on the job. Subsequent follow-up surveys have revealed a sharp drop in adverse comments pertaining to insufficient typing skills.

Example 3. Enrollments in a machinist program at a small vocational school has been steadily declining for three successive years and had reached such a low level that the entire program was about to be phased out. While considering the fate of the program, the director analyzed the follow-up

information to locate possible trends. Student comments revealed that many graduates complained of poor facilities and the use of obsolete, run-down equipment. Employer data indicated that most graduates had to be extensively retrained, apparently due to the minimal skill training within the program. Additional checks of employment trends and graduate placements, however, revealed that a definite need for machinists existed in the community.

Through consultations with other administrators and representatives from the State Department of Education, a decision was reached to attempt to revise and update the program. A state grant was obtained to aid in the revision of curricular material, and a federal grant was also awarded to increase funding for new equipment and facilities. Imput from the local vocational advisory committee was elicited and utilized during the renovation of the program. The program now places a very high percentage of its graduates in jobs for which they are trained, and negative comments about the program have markedly decreased.

Follow-up and Planning/Improving Programs

In planning or improving programs based on follow-up information, great care must be taken in using follow-up results. For example, it does not necessarily follow that the course content is inadequate because only a few graduates found related work. The following situation is representative of the problem. A community college or area vocational technical institute may have a forestry technology program. Most states and the federal government require that an applicant for jobs in this area be of a certain age. If the graduates from the community college's program are younger than the required age, they cannot get a job with the state or federal government. On the surface, because almost no graduates found related work, the program might be evaluated to be of low quality.

The problem is that it is difficult to determine the cause of something if only the effect is known. Follow-up information only tells what happened. All too often it is assumed that something in the contents of the course has caused the effect. Further, the results of one follow-up study may be insufficient for a proper evaluation for planning or improving programs. Even if three or four follow-up studies have been conducted, other information may be necessary. For example, over a three-year period, the proportion of graduates from a particular program who found related work may have been decreasing each year. It could be that:

1. The demand for graduates with this skill is decreasing.

2. Other educational agencies are also preparing students with those skills at an increasing rate, causing an oversupply.

3. The skill requirements for the occupations are changing and graduates trained according to the old skill requirements cannot compete for the job openings.

4. An increase in unemployment is causing temporary decreases in demand.

5. The quality of the program is deteriorating.

6. A combination of the first five phenomena is occurring.

Seen from this perspective, follow-up information only gives a picture of the effect. Knowing the effect is not enough. There are too many possible causes, and to blame the content of the course is to ignore all other possible causes. An analysis of market conditions, competing educational agencies, skill requirements, and course content must be made before a cause can be determined.

By contrast, the proportion of graduates who found related work may have been increasing over a three-year period. This may be because:

1. The demand for graduates with this skill is increasing.

2. A competing educational agency is decreasing enrollments in that course(s) because it cannot compete successfully.

3. Unemployment is decreasing, causing a rise in the demand for graduates with this skill.

4. The quality of the program is increasing, and the graduates are in greater demand.

5. A combination of the above.

Follow-up information can be a primary indicator in determining if program planning, improvement, or change is necessary. However, follow-up information can only supply answers on what happened. To determine causal factors, other information such as labor market factors, competing institutions, occupational skill requirements, and program content must be examined.

Follow-up and Planning/Improving Services

Graduates' responses to questions related to services provided by an educational agency can be of value in determining a need for improvement and development. The guidance staff, by analyzing the reasons given by graduates for not finding related work, could discover a need for group counseling and/or improved job placement services. For example, a large portion of the graduates may have indicated that they learned there was too little opportunity for advancement in their occupational field. This situation could be remedied in the future by having ninth or tenth graders take a short seminar on occupational mobility and career paths. Or perhaps some graduates indicated they didn't like the working conditions or discovered the pay was too low. Planned tours of local factories/companies and information on prevailing wages for the occupations in the area could overcome this problem.

Sometimes the results of follow-up studies can indicate the need for services not presently provided. In responding to the question, "How did you get your first full-time job after graduation?" only a small proportion said through:

1. instructor
2. other school/college personnel
3. state employment agency

The graduates may also have said it took them three to five months to get a job. Based on this information, it may become apparent that the educational agency should support a job placement service.

Often, the results of a follow-up study indicate a proportion of the graduates moved out of the area to find work. This may occur particularly in those areas which have limited job opportunities in certain occupational areas and/or high unemployment rates.

An educational agency finding a large percentage of its graduates leaving the area after graduation should develop a special task force to:

1. Determine if there is a low local labor demand. If there is, then programs should be revised to accurately reflect the level of occupational requirements. If they find this is not the case, then certain programs may need to be revised to better reflect the knowledge and skills that are being required.

2. Develop a coordinated placement service which helps the graduates to find suitable employment outside the immediate area.

3. Establish periodic meetings with students and their parents to acquaint them with information on the limited local market conditions and the need to perhaps consider working in another labor market area after leaving school.

Follow-up results can have value as indicators of needed services not presently provided or as indicators of need for expanding existing student services. The development or improvement of these services can often be initiated without any additional personnel and cost. As such, decisions related to student services can readily be implemented. The added advantage of having relevant student services is in the students' and the parents' perception that the educational agency is making concerted efforts to provide for the total needs of the students.

Other Users of Follow-up Information

Ideally, the primary users of a follow-up report are the local educational agency and the community. The secondary users of this information are:

1. local advisory council

2. state advisory council

3. State Department of Education

4. U. S. Office of Education

Each of these agencies has a different interest in and use for the follow-up report(s). In turn, each of these four users has a different influence on the possible decisions a local educational agency may make.

A local advisory council is primarily concerned with what the follow-up results may mean in terms of a specific program and course content. To be able to determine specifically which course should be altered, the local advisory council will need to review the detailed report. The unique contribution such a group can make relates to their knowledge of the industry's requirement for specific skills. As such, they can help to determine if changing skill requirements are causing fewer graduates to find work related to their training. Local advisory councils can also be helpful in determining the accuracy of conclusions related to

program offerings and in reinforcing recommendations related to programs. To a certain extent, the information provided by the craft committee can serve as a valid time check on the follow-up results.

The state advisory council, by contrast, is concerned with broad policy matters related to the effectiveness of programs. A local follow-up is seen by this group as an accounting of the effectiveness of the local programs to meet the needs of students for better job opportunities and to meet the intent of the federal legislation. The recommendations of the state advisory council go directly to the state board of education. The most common types of recommendations to the state board based on local follow-up studies relate to:

1. approving new programs
2. evaluating existing programs in terms of:
   a. labor market needs
   b. student needs
3. long range planning
4. eliminating sex or race bias in programs
5. coordinating programs between two different educational levels
6. in-service training of instructors on new occupational skill requirements

A state advisory council is concerned with policy matters. However, it only has the power to recommend policy.

The state department of education, technically, is the administrator of the regulations established by the state board of education. Its authority is derived from the state board. The state department of education implements policy, recommends new policy, or recommends changes in policy. Local follow-up results can be used by the state department of education to:

1. validate its sample follow-up of graduates
2. aid in determining the effectiveness of local programs
3. develop criteria for future funding using either federal or state monies
4. recommend policy changes to the state board of education

By contrast, the U. S. Office of Education, as the administrator of federal legislation, can develop regulations and conduct audits regarding the use of federal monies at state and local levels. Local follow-ups can be used by that office to assist in determining how adequately federal monies were used at the local level in carrying out the intent of the law. They can also be used to assist in determining future funding levels. Figure 6-2 identifies the various institutions, the methods commonly used in gathering data and the basic ways which those data are used.

In summary, the results of follow-up are a key issue in the federal level assessments of the success of vocational education.

According to the 1976 Education Amendments, the states and local educational agencies must also be concerned about the results of follow-ups if they do not wish to jeopardize federal support of vocational education at the local level. Thus, the results of a follow-up study are of interest to a wide audience.

A few helpful hints for presenting follow-up information to the previously mentioned audiences are found in figure 6-3.

Figure 6-2

Uses of Follow-up Information

INSTITUTION	BASIC USES OF DATA	DATA GATHERING METHODS
U. S. Office of Education	1. Broad planning and coordinating 2. Establishing accountability 3. Data base for federal laws and regulations 4. Measurement and effect of policies and laws	1. Mailed instrumentation with guidelines 2. Mail surveys and questionnaires 3. Special meetings
State Departments of Education	1. State and federal accountability requirements 2. State plans 3. Broad programmatic and curricular revisions 4. Support of State MIS Systems	1. Mail surveys and questionnaires 2. Interviews 3. In-service workshops 4. Special meetings
State Advisory Committees	1. Inquiries into state policies and procedures 2. Data base for recommendations 3. Evaluating state policies, procedures and problems	1. Special meetings 2. Interviews
Higher Education	1. Planning and decision making 2. Improving programs and services 3. Local, state and federal accountability requirements 4. Support for MIS systems	1. Mail surveys and questionnaires 2. Interviews 3. Telephone surveys 4. In-service workshops 5. Special meetings
School Districts	1. Local, state and federal accountability requirements 2. Improving programs and services 3. Planning and decision making 4. Evaluating district plans, policies and procedures	1. Mail surveys and questionnaires 2. Interviews 3. Telephone surveys 4. In-service workshops 5. Special meetings
LEAs	1. Improving programs and services 2. Planning and decision-making 3. Evaluating individual conditions, programs policies, etc. 4. Local, state and federal accountability requirements	1. Mail surveys and questionnaires 2. Interviews 3. Telephone surveys 4. In-service workshops 5. Special meetings
Local Advisory and Craft Committees	1. Planning and decision making 2. Data for recommendations 3. Evaluating local programs, policies, procedures, etc.	1. Special meetings 2. Interviews 3. Telephone surveys
Other Educational Groups	1. Planning and decision making 2. Evaluating programs, policies and procedures 3. Improving conditions, situations, etc.	1. Mail surveys and questionnaires 2. Interviews 3. Telephone surveys 4. Special meetings

Figure 6-3

Factors to Consider When Presenting Follow-up Information

1. Present data to as many appropriate groups and individuals as possible.

2. Go through the proper chain of command when presenting data—school board or board of trustees, superintendent or presidents, administrators, etc., where applicable.

3. Although many follow-up reports are prepared for boards of education, most utilization of the information is done on a school or program basis, so the appropriate administrator should be utilized at various levels in a school or college.

4. Talk directly to teachers where applicable. When data indicate a problem, it can be solved many times by going directly to the heart of the problem (teacher, principal, program manager).

5. When making oral presentations, cover areas most important to the audience and discuss thoroughly if necessary.

6. Send an accompanying form with follow-up reports to be filled in by the recipient of the report, showing who used the data for what, how, etc. This is an excellent way to identify who is using the data.

7. A considerable amount of public relations is involved with the presentation phase of of the follow-up process. Make use of the public media.

8. Many reports involve data comparisons, so have state, district, and institutional data available for some presentations. Make sure that copies are available for everyone, if possible. However, one should avoid school-to-school comparisons.

9. When presenting information to a board of education, report only the aspects that are of immediate interest. Follow-up information not related to board policies should not be included.

10. Other agencies that can use follow-up information include: Chambers of Commerce, State Employment Service, and Comprehensive Employment and Training Act prime sponsors. The follow-up data is relevant to individuals in all these agencies.

SECTION 7

GLOSSARY

GLOSSARY*

Some of the key terms used in the follow-up study elude clear and precise definition. Those definitions that follow are intended to clarify the overall focus on the follow-up study but go beyond the definitions needed in doing a follow-up study. Moreover, they are identified as a "definitional base" for the comprehensive evaluation of vocational education, of which follow-up studies are an integral part. They are not "carved in stone" and should not be interpreted so as to foreclose alternative, potentially valuable definitions.

However, the definitions that follow pertain to all sections of the Educational Amendments of 1976, Title II, Vocational Education. They were taken from "the Act" itself (in particular Part C - Definitions) and Appendix A -- Definitions as they appeared in the Rules and Regulations, Federal Register, Vol. 42, No. 191 - Monday, October 3, 1977.

Categorical definitions of handicapped were taken from the Rules and Regulations that implement Part B of the Education of the Handicapped Act (as required by the Education for All Handicapped Children Act of 1975) Federal Register, Vol. 42, No. 136 - Tuesday, August 23, 1977. Other definitions were taken from the Vocational Education Data System (VEDS) that has become the review version being examined in the Office of Education (OE) and by the Office of Management and Budget (OMB). Therefore, the definitions that follow are not necessarily final.

Definitions related to corrections, such as those for offender and youth offender, were taken from the following source: Search Group, Inc., U. S. Department of Justice, Law Enforcement Assistance Administration, National Criminal Justice Information and Statistics Service, Dictionary of Criminal Justice Data Terminology. First Edition, 1976, pp. 66,97.

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* Source: Marion Franken, "Providing Technical Evaluation Services for Educational Agencies," mimeographed (Columbus, Ohio: The National Center for Research in Vocational Education, The Ohio State University, 1978), pp. 15-27.

Act: The Vocational Education Act of 1963, Public Law 88-210, as amended by Title II of the Education Amendments of 1976, Public Law 94-482, 90 Stat. 2168, 20 U. S. C. 2301 et seq.

Administration: Activities of a state or an eligible recipient necessary for the proper and efficient performance of its duties under the Act, including supervision, but not including ancillary services.

Adult as it pertains to long-term adult: Includes persons enrolled in programs not classifiable under eleventh and twelfth grade levels nor postsecondary. Persons enrolled in a program of at least 500 contact hours duration leading to new occupation preparation will be reported here. Persons registered either by the federal or state government and currently enrolled in a related course leading to journeyman status (apprentice program) will also be reported here.

Adult as it pertains to short-term adult: Persons enrolled in programs of less than 500 contact hours.

Adult program: Vocational education for persons who have already entered the labor market or who are unemployed or who have completed or left high school and who are not described in the definition of "postsecondary program."

American Indian or Native Alaskan: A person having origins in any of the original peoples of North America, or who maintains cultural identification through tribal affiliation or community recognition.

Ancillary services: Activities which contribute to the enhancement of quality in vocational education programs, including activities such as teacher training and curriculum development, but excluding administration (except in consumer and homemaking education under Section 150 of the Act).

Area vocational education school: (a) A specialized high school used exclusively or principally for the provision of vocational education to persons who are available for study in preparation for entering the labor market; or (b) the department of a high school exclusively or principally used to provide vocational education in no less than five different occupational fields to persons who are available for study in preparation for entering the labor market; or (c) a technical or vocational school used exclusively or principally for the provision of vocational education to persons who have completed or left high school and who are available for study in preparation for entering the labor market; or (d) the department or division of a junior college or community college or university operating under the

policies of the state board which provides vocational education in no less than five different occupational fields, leading to immediate employment but not necessarily leading to a baccalaureate degree, if: (1) the vocational programs are available to all residents of the state designated and approved by the state board; and (2) in the case of a school, department, or division described in (c) or (d), it admits as regular students both persons who have completed high school and persons who have left high school.

Asian or Pacific Islander: A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or Pacific Islands. This area includes, for example, China, Japan, Korea, the Philippine Islands, Samoa, India, and Vietnam.

Bilingual vocational training: Training or retraining in which instruction is presented in both the English language and the dominant language of the persons receiving training and which is conducted as part of a program designed to prepare individuals of limited English-speaking ability for gainful employment as semi-skilled or skilled workers or technicians or subprofessionals in recognized occupations and in new and emerging occupations, but excluding any program to prepare individuals for employment in occupations which require a baccalaureate or advanced degree; bilingual vocational training includes guidance and counseling (either individually or through group instruction) in connection with such training or for the purpose of facilitating occupational choices; instruction related to the occupation or occupations for which the students are in training or instruction necessary for students to benefit from such training; the training of persons engaged as, or preparing to become, instructors in a bilingual vocational training program; and the acquisition, maintenance, and repair of instructional supplies, aids, and equipment, but such term does not include the construction, acquisition or initial equipment of buildings or the acquisition or rental of land.

Black, not of Hispanic Origin: A person having origins in any of the black racial groups of Africa.

CETA: The Comprehensive Employment and Training Act of 1973, Public Law 93-23, 87 Stat. 839, as amended.

Commissioner: The U. S. Commissioner of Education or the Commissioner's designee.

Completed Program: A student who finished a planned sequence of courses, services or activities designed to meet a vocational occupational objective and which purports to teach entry-level job skills. Include only those persons in secondary, postsecondary and long-term adult programs. Report these persons unduplicated by race/ethnic group by sex, level, and handicap, as previously defined. (Federal Regulations, October 3, 1977, Part VI).

Construction: (a) Construction of new buildings; (b) Acquisition, expansion, remodeling, and alteration of existing buildings; (c) Site grading and improvements; and (d) Architect fees.

Consumer and homemaking education programs: Consist of instructional programs, services, and activities at all educational levels for the occupations of homemaking including: (1) Comprehensive Homemaking; (2) Child Development and Guidance; (3) Clothing and Textiles; (4) Consumer Education; (5) Family Health; (6) Family Living and Parenthood Education; (7) Food and Nutrition; (8) Home Management; (9) Housing and Home Furnishings; and (10) Other.

Cooperative Education (Unduplicated): A program of vocational education for persons who, by written (and on file) cooperative arrangements between school and employer, receive instruction, including required academic courses and related vocational instruction by alternating study in school with a job in any occupational field, but these two experiences must be planned and supervised by the school and employers so that each contributes to the person's education and his or her employability. Work periods and school attendance may be on alternate half days, full days, weeks, or other periods of time in fulfilling the cooperative program.

Curriculum materials: Materials: (a) Covering instruction in a course or series of courses in any occupational field; and (b) Designed to prepare persons for employment at the entry level; or (c) Designed to upgrade occupational competencies of those previously or presently employed in any occupational field.

Disadvantaged: Persons (other than handicapped) who meet the following definitions:

Economic disadvantaged: (1) Family income is at or below national poverty level; (2) Participant or parent(s) or guardian of the participant is unemployed; (3) Participant or parent of participant is recipient of public assistance; or (4) Participant is institutionalized or under state guardianship. Operationally, economic disadvantage can be determined by identifying (a) students at the secondary level who are participating in a free or reduced lunch program, AFDC (Aid to Families of Dependent Children) program, or work-study program, and (b) students at the postsecondary and long-term adult levels from basic education opportunity grants or similar financial aid records.

Academic disadvantaged: (1) Lack of reading and writing skills; (2) lack of mathematical skills; or (3) performance below grade level. Operationally, academic disadvantage can be determined at (a) the secondary level by identifying students enrolled in remedial programs, or performing below grade level on standardized tests, or failing a grade; and at (b) postsecondary and long-term adult levels by identifying students enrolled in remedial instruction or on academic probation.

Substantive evidence of disadvantage must be kept on file.

Displaced Homemaker: A state shall use funds under its basic grant (Section 120 of the Act) in accordance with its approved five-year state plan and annual program plan to provide vocational education programs for the following special groups: (a) Persons who had been homemakers but who now, because of dissolution of marriage, must seek employment; (b) Persons who are single heads of households and who lack adequate job skills; (c) Persons who are currently homemakers and part-time workers but who wish to secure full-time jobs; and (d) Women who are now in jobs which have been traditionally considered jobs for females and who wish to seek employment in job areas which have not been traditionally considered as job areas for females, and men who are now in jobs which have been traditionally considered jobs for males and who wish to seek employment in job areas which have not been traditionally considered as job areas for males.

Eligible recipient: (a) A local educational agency, or (b) A postsecondary educational institution.

Enrollment of handicapped by type of instructional setting: To be reported only once, by instructional setting of program in which enrolled. Instructional setting of program should be indicated as either regular, mixed, separate, separate facility, or other.

Regular program: One which is conducted in an integrated setting, i.e., with handicapped and nonhandicapped students together. A handicapped student should be reported in a regular program if that student experienced full participation in a regular vocational education program. If added support services are provided to assist a student, he/she should be reported under the regular program provided those services are in addition to full participation in the regular program.

Mixed program: A program where handicapped students simultaneously participate in both regular and separate instructional settings. The handicapped person participates part-time in the regular instructional setting.

Separate program: The handicapped person is enrolled at a regular institution in a vocational education program limited to handicapped persons.

Separate facility: The handicapped student is enrolled full-time in a vocational education program that is provided at a facility designed for and limited to handicapped students.

Other: Vocational education program activities provided to handicapped students in hospitals or at their homes.

Financial ability: The property wealth per capita of local school districts and of other public agencies having a tax base or the total tax effort of the area served by these schools and agencies as that effort is a percentage of the income per capita of those within the taxing body.

SECTION 8

SELECTED BIBLIOGRAPHY

Gifted and talented: Children identified by professional qualified persons, who by virtue of outstanding abilities are capable of high performance. These are children who require differentiated educational programs and/or services beyond those normally provided by the regular school program in order to realize their contribution to self and society. "High performance" might be manifested in any or a combination of these areas: (1) general intelligence; (2) creative or productive thinking; (3) leadership ability; (4) visual and performing arts; and (5) psychomotor ability.

Handicapped children: (a) As used in the part, "handicapped children" means those children evaluated in accordance with subsections 121a.530 - 121a.534 as being mentally retarded, hard of hearing, deaf, speech imparied, visually handicapped, seriously emotionally disturbed, orthopedically impaired, other health impaired, deaf-blind, multi-handicapped, or as having specific learning disabilities, who because of those impairments need special education and related services. For VEDS reporting purposes at the secondary level, report all handicapped persons enrolled in vocational education programs who have an Individualized Education Plan (IEP) as prescribed under Public Law 94-142. For reporting purposes for postsecondary and long-term adult vocational education programs, a handicapped person is a person who has a physical or mental impairment. Substantive evidence of handicapping condition must be on file either from medical records or, were appropriate, by psychological (and/or physiological) disgnosis. (b) The terms used in this definition are defined as follows:

1. Deaf: A hearing impairment which is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification, which adversely affects educational performance.

2. Deaf-blind: Concomitant hearing and visual impairments, the combination of which causes such severe communications and other developmental and educational problems that they cannot be accommodated in special education programs solely for deaf or blind children.

3. Hard of hearing: A hearing impairment whether permanent or fluctuating, which adversely affects a child's educational performance but which is not included under the definitions of "deaf" in this section.

4. Mentally retarded: Significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior and manifested during the developmental period, which adversely affects a child's educational performance.

5. Multi-handicapped: Concomitant impairments (such as mentally retarded-blind, mentally retarded-orthopedically impaired, etc.), the combination of which causes such severe educational problems that they cannot be accommodated in special education programs solely for one of the impairments. The term does not include deaf-blind children.

6. Orthopedically impaired: A severe orthopedic impairment which adversely affects a child's education performance. The term includes impairments caused by congenital anomaly (e.g., clubfoot, absence of some member, etc.), impairments caused by disease (e.g., poliomyelitis, bone tuberculosis, etc.), and impairments from other causes (e.g., cerebral palsy, amputations, and fractures or burns which cause contractures).

7. Other health impaired: Limited strength, vitality or alertness, due to chronic or acute health problems, such as a heart condition, tuberculosis, rheumatic fever, nephritis, asthma, sickle cell anemia, hemophilia, epilepsy, lead poisoning, leukemia, or diabetes, which adversely affects a child's educational performance.

8. Seriously emotionally disturbed: A condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects educational performance: (A) An inability to learn which cannot be explained by intellectual, sensory, or health factors; (B) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers; (C) Inappropriate types of behavior or feelings under normal circumstances; (D) A general pervasive mood of unhappiness of depressions; or (E) A tendency to develop physical systems or fears associated with personal or school problems. (ii) The term includes children who are schizophrenic or autistic. The term does not include children who are socially maladjusted, unless it is determined that they are seriously emotionally disturbed.

9. Specific learning disability: A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain disfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, or of environmental, cultural, or economic disadvantage.

10. Speech impaired: A communication disorder, such as stuttering, impaired articulation, a language impairment, or a voice impairment, which adversely affects a child's educational performance.

11. Visually handicapped: A visual impairment which, even with correction, adversely affects a child's education performance. The term includes both partially seeing and blind children.

High school program: Vocational education for persons in grades nine through twelve.

Hispanic: A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.

Industrial arts education programs: Those education programs (a) which pertain to the body of related subject matter, or related courses, organized for the development of understanding about all aspects of industry and technology, including learning experiences involving activities such as experiments, designing, constructing, evaluating and using tools, machines, materials and processes; and (b) which assist individuals in making informed and meaningful occupational choices which prepare them for entry into advanced trade and industrial or technical education programs. (Section 195 (15); 20 U.S.C. 2461).

Leavers: Anyone who has been enrolled and attended a program of vocational education and has left the program or institution without completing the program, including persons who leave the program voluntarily before its formal completion

because they have acquired sufficient entry-level occupational preparation to work in the field, and who have taken a job related to their field of training and, all other leavers. This count should include all persons who left a program whose status was documented during the reporting year. For example, a person who left in June 1979, but was not documented until the following September would be reported in the 1979-80 reporting cycle. Report these persons by race/ethnic group, by sex, level of completion for persons who left after competing more than 50 percent of the program, and for persons who left before completing 50 percent or less of the program, and handicapped.

Limited English-speaking ability: When used in reference to an individual means: (a) Individuals who were not born in the United States or whose native tongue is a language other than English, and (b) Individuals who came from environments were a language other then English is dominant, and by reasons thereof, have difficulties speaking and understanding instruction in English language.

Local educational agency: (a) A board of education (or other legally constituted local school authority) having administrative control and direction of public elementary or secondary schools in a city, county, township, school district, or political subdivision of a state; or (b) Any other public educational institution or agency having administrative control and direction of a vocational educational program.

Low-income family or individual: Families or individuals who are determined to be low-income according to the latest available data from the Department of Commerce.

Occupational preparation programs: Programs designed to impact competencies to persons to prepare them for employment (paid or unpaid) in a specific occupational field.

Offender: An adult who has been convicted of a criminal offense. Defining features include: (1) identified adult, (2) charged with a crime by a criminal justice agency, (3) convicted.

Other occupational programs: (to be reported by two-digit OE code) Enrollments in a program or activity below the eleventh grade level, courses prerequisite to a six-digit OE code program, or a course or activity that leads to more than one six-digit program.

Postsecondary student: Persons enrolled in vocational education programs to whom credit is given toward an Associate Degree. Persons who are pursuing a certificate or license rather than an Associate Degree even though they may be concurrently receiving credit toward an Associate Degree shall be classified adults.

Postsecondary educational institution: A nonprofit institution legally authorized by a state to provide education for persons sixteen years of age or older who have graduated from or left elementary or secondary school.

Postsecondary program: Vocational education for persons who have completed or left high school and who are enrolled in organized programs of study for which credit is given toward an associate or other degree, but which programs are not designed as baccalaureate or higher degree programs.

Private vocational training institution: A business or trade school, or technical institution or other technical or vocational school, in any state, which (a) admits as regular students only persons who have completed or left elementary or secondary school and who have the ability to benefit from the training offered by such institution; (b) is legally authorized to provide, and provides within that state, a program of postsecondary vocational or technical education designed to fit individuals for useful employment in recognized occupations; (c) has been in existence for two years or has been specially accredited by the Commissioner as an institution meeting the other requirements of this subsection; and (d) is accredited (1) by a nationally recognized accrediting agency or association listed by the Commissioner pursuant to this clause, or (2) if the Commissioner determines that there is no nationally recognized accrediting agency or association qualified to accredit schools of a particular category, or (3) if the Commissioner determines that there is no nationally recognized or state agency or association an Advisory Committee appointed by him/her and composed of persons specially qualified to evaluate training provided by schools of that category, which committee shall prescribe the standards of content, scope, and quality which must be met by those schools and shall also determine whether particular schools meet those standards. For the purpose of this paragraph, the Commissioner shall publish a list of nationally recognized accrediting agencies or associations and state agencies which he/she determines to be reliable authority as to the quality of education or training afforded.

Program: A planned sequence of courses, services, or other educational activities, eleventh grade and above, designed to meet a specific vocational objective(s).

Program completer: A student who finished a planned sequence of courses, services, or activities which purports to teach entry-level job skills designed to meet an occupational objective.

Program enrollment: Enrollment will be counted upon official entrance into an eleventh grade level vocational education program for which a vocational objective can be stated or implied.

Related services: Includes transportation and such developmental, corrective and other supportive services as are required to assist a handicapped person to benefit from the vocational education program; such services include speech pathology and audiology, psychological services, physical and occupational therapy, recreation, counseling services, and medical services for diagnostic or evaluation purposes.

School facilities: (a) Classrooms and related facilities including initial equipment and interests in lands on which such facilities are constructed. (b) "School facilities" does not include any facility intended primarily for events for which admission is to be charged to the general public.

Secondary program: Vocational education for persons in secondary grades as defined by state law.

Sex bias: Behaviors resulting from the assumption that one sex is superior to the other.

Sex discrimination: Any action which limits or denies a person or a group of persons opportunities, privileges, roles, or rewards on the basis of their sex.

Sex stereotyping: Attributing behaviors, abilities, interests, values, and roles to a person or group of persons on the basis of their sex.

Short-term adult enrollments: Enrollments in adult vocational education for programs of less than 500 contact hours duration.

Special educational assistance: Specially designed instruction and aids to meet the individual needs of a handicapped student; such aids may include teachers' aides to support classroom or lab instruction, taped texts, interpreters or other effective methods of making orally delivered materials available to students with hearing impairments, readers in libraries for students with visual impairments, classroom equipment adapted for use by students with manual impairments, and other similar services and actions, as well as, facility modifications.

Special needs: Persons who meet the requirements under the law for one of the categories (handicapped, of limited English-speaking ability, disadvantaged [economic and academic]) whether or not special services are provided by vocational education per se.

Special needs (unduplicated): Enrollment counts of persons who are handicapped, of limited English-speaking ability or disadvantaged (economic or academic), regardless of whether or not special services are being provided by vocational education per se. A person must be listed under only one type of special needs category. When a person enrolled has more than one special need, he/she is to be reported unduplicated in this order: handicapped, of limited English-speaking ability, disadvantaged (economic or academic).

State: Includes: (a) The fifty states; (b) The District of Columbia; (c) The Commonwealth of Puerto Rico; (d) The Virgin Islands; (e) Guam; (f) American Samoa; and (g) The Trust Territory of the Pacific Islands.

State board: The state board designated or created by state law as the sole state agency responsible for: (a) the administration of vocational education; or (b) supervision of the administration of vocational education in the state.

State educational agency (SEA): (a) The state board of education; or (b) Other agency or office primarily responsible for the state supervision of public elementary and secondary schools; or (c) If there is no such office or agency, an office or agency designated by the governor or by state law.

Support services for women:

Counseling: Counseling women entering and enrolled in nontraditional programs on the nature of these programs and on the ways of overcoming the difficulties which may be encountered by women in these programs.

Job development: Programs and activities in the area of job development include the provision of materials and information concerning the world of work which present women students entering, enrolled in, or interested in nontraditional programs, the options, opportunities, and range of jobs available in these nontraditional fields. Job development support services may also be carried out through bringing persons employed in these nontraditional fields into the schools, as well as providing opportunities for women students to visit the workplace of business and industry so as to afford them a clear understanding of the nature of the work, including an understanding of the work setting in which these jobs are performed.

Job follow-up support: Services to assist women students in finding employment relevant to their training and interests. Follow-up services may be provided to assist students in the work force and to deal with barriers which women face in working in nontraditional areas.

Training of women instructors: Funds may be used to increase the number of women instructors involved in the training of individuals in programs which have traditionally enrolled mostly males, so as to provide supportive examples for these women who are preparing for jobs in nontraditional areas of employment.

Terminations (unduplicated): "Completed Program" means a student who finished a planned sequence of courses, services, or activities designed to meet a vocational occupational objective and which purports to teach entry-level job skills. Include only those persons in secondary, post-secondary and long-term adult programs. Report these persons unduplicated by race/ethnic group by sex, level, and handicap, as previously defined. (Federal Regulations, October 3, 1977, Part VI).

Transfers: Persons who left vocational education programs to enroll (a) in other vocational education programs or (b) in programs not related to vocational education. A count of transfers should include all persons whose transfer status was documented during the reporting year. For example, a person who transferred in June, 1979 whose transfer was not documented until the following September would be counted in the 1978-80 reporting cycle.

Vocational education: Organized educational programs which are directly related to the preparation of individuals for paid or unpaid employment or for additional preparation for a career requiring other than a baccalaureate or advanced degree. For purposes of this paragraph, the term "organized education program" means only: (a) instruction related to the occupation or occupations for which the students are in training or instruction necessary for students to benefit from such training and (b) the acquisition, maintenance, and repair of instructional supplies, teaching aids, and equipment. The term "vocational education" does not mean the construction, acquisition, or initial purchase of equipment for buildings or the acquisition or rental of land.

Vocational instruction: Instruction which is designed to prepare individuals upon its completion for employment in a specific occupation or cluster of closely related occupations in an occupational field, and which is especially and particularly suited to the needs of those engaged in or preparing to engage in such occupational or occupations. Such instruction may include: (a) Classroom instruction; (b) Classroom related field, shop, and laboratory work; (c) Programs providing occupational work experiences, including cooperative education and related instructional aspects of apprenticeship programs; (d) Remedial programs which are designed to enable individuals to profit from instruction related to the occupation or occupations for which they are being trained by correcting whatever educational deficiencies or handicaps prevent them from benefiting from such instruction; and (e) Activities of vocational student organizations which are an integral part of the vocational instruction, subject to the provisions in 104.513.

Vocational objective: The intended occupational outcome of training and other preparation as stated by the individual student or implied. The vocational objective usually is stated in terms of specific job titles.

White, not of Hispanic origin: A person having origins in any of the original peoples of Europe, North Africa, or the Middle East.

Youthful offender: A person, adjudicated in criminal court who may be above the statutory age limit for juveniles but is below a specified upper age limit, for whom special correctional commitments and special record sealing procedures are made available by statute. Defining features include: (1) person adjudicated in criminal court; (2) judicial proceedings began in criminal or juvenile court; (3) defined a youthful offender in accord with a statute stating age limits, and; (4) providing special correctional commitments and/or record sealing procedures.

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SECTION 9

APPENDIXES

APPENDIX A

Former Student Follow-up Questionnaires and Employer Follow-up Form

DF-6

THE CENTER FOR VOCATIONAL AND TECHNICAL EDUCATION
THE OHIO STATE UNIVERSITY

INITIAL FOLLOW-UP SURVEY OF FORMER VOCATIONAL STUDENTS

Student and Vocational Program Identification

Your Social Security Number ___ ___ ___ ___ ___ ___ ___ ___ ___

Is Your Name and Address Correct as Printed Above?
If not, please print the corrected information below:

New Name ___ ___ ___ ___ ___ ___ ___ ___

6. If you got a **full-time** job when you left this vocational program:

What was your job? _____

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7. How closely did your **first full-time** job (30 or more hours per week) after leaving this vocational program relate to the training you received?

60 Check only one box

1 ☐ I was employed in the occupation for which I was trained by this vocational program
2 ☐ I was employed in a related occupation
3 ☐ I was employed in a completely different occupation

8. Did this vocational training program adequately prepare you for your **first full-time** job after leaving this training?

☐ Yes ☐ No

9. What was your **beginning hourly wage** on your **first full-time** job since leaving this vocational program?

62 Check only one box

1 ☐ $1.59 or less per hour
2 ☐ $1.60 to $1.99 per hour
3 ☐ $2.00 to $2.49 per hour
4 ☐ $2.50 to $2.99 per hour
5 ☐ $3.00 to $3.99 per hour
6 ☐ $4.00 or more per hour

10. How did you get your **first full-time** job after leaving this vocational training?

Check appropriate box or boxes below

☐ I got the job myself
☐ My family or friends helped me get the job
☐ The job placement services provided by the school helped me get the job
☐ The state employment service helped me get the job
☐ A private employment agency helped me get the job
☐ Other (specify) _____

11. What is the **most** you have earned on a **full-time** job since leaving this program?

66 Check only one box

1 ☐ $1.59 or less per hour
2 ☐ $1.60 to $1.99 per hour
3 ☐ $2.00 to $2.49 per hour
4 ☐ $2.50 to $2.99 per hour
5 ☐ $3.00 to $3.99 per hour
6 ☐ $4.00 or more per hour

12. If you have held two or more full-time jobs (30 or more hours per week) since you ended this vocational training, check one box below.

70
1 ☐ I was trained in school for my **last** job
2 ☐ My **last** job was related to this vocational training
3 ☐ My **last** job was not at all related to this vocational training

13. Indicate below the **location** of your present or most recent **full-time** employment.

_____ Village, Town, City

_____ County

_____ State

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14. If you are presently working, what is your job?

_____

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15. What **wages** are you presently earning?

36 Check only one box

1 ☐ $1.59 or less per hour
2 ☐ $1.60 to $1.99 per hour
3 ☐ $2.00 to $2.49 per hour
4 ☐ $2.50 to $2.99 per hour
5 ☐ $3.00 to $3.99 per hour
6 ☐ $4.00 or more per hour
7 ☐ I am unemployed

16. What is your **current employment status?**

Check the appropriate box or boxes below

☐ I am employed
  ☐ **full-time** (30 or more hours per week)
  ☐ **part-time** (less than 30 hours per week)
☐ I am **unemployed,**
  ☐ **but looking** for work
  ☐ and **not looking** for work

42 ☐ I am in the **military service**

1971

17. As best you know, what type(s) of **job placement service(s)** were provided by the school and the vocational program in which you were enrolled?

43
- ☐ A school placement service coordinated with the State Employment Service
- ☐ Vocational Teachers helped place students in jobs by making referrals
- ☐ Guidance Counselors helped students find jobs
- ☐ Other (specify) _____
- ☐ School had no placement services

18. After you got your **first** job (full-time or part-time) following this vocational training, have you ever again used any of the **job placement services** provided by the school or this vocational program?

☐ Yes ☐ No

If yes, check the service(s) you have used since getting your first job

50
- ☐ Coordinated service provided by school and state employment service
- ☐ Vocational teacher assistance
- ☐ Guidance counselor assistance
- ☐ Other (specify) _____

19. How many separate vocational courses did you take while enrolled in this vocational program?

53 ___ Courses

20. Did you enroll in this vocational program with the specific purpose in mind of getting skill training in order to get a job in this field.

☐ Yes ☐ No

21. Were you **satisfied** with the vocational training you received in this program?

☐ Yes ☐ No

22. Would you **recommend** this vocational program to others?

☐ Yes ☐ No

23. Since you left this vocational program, have you enrolled in any **additional education** program(s)?

58 ☐ Yes ☐ No

(CONTINUED NEXT COLUMN)

23. Continued.

If yes, check type(s) and purpose(s) below:

59
- ☐ **General education program(s)**
  - ☐ To raise my general education level
  - ☐ Informal, noncredit course(s)
- ☐ **Vocational program(s)**
  - ☐ To upgrade the vocational skills previously learned in this program
  - ☐ To learn a new occupation

What type(s) of vocational training program(s) did you attend?

67
- ☐ Private school(s)
- ☐ Public school(s)
- ☐ Business or Industry

24. If you did enroll for additional education after leaving this vocational program, have you received (or do you expect to receive) one or more of the following:

☐ Yes ☐ No

If yes, check type(s)

70
- ☐ A certificate (type) _____
- ☐ A diploma (type) _____
- ☐ A 2-year associate degree (major) _____
- ☐ A 4-year college degree (major) _____
- ☐ Other (specify) _____

25. Are you **now** enrolled in a **vocational** program?

☐ Yes ☐ No

26. Are you **now** enrolled in any **educational** program(s) other than vocational?

☐ Yes ☐ No

27. Are you interested in getting **more vocational** training?

☐ Yes ☐ No.

28. Are you interested in getting **more general** education?

77 ☐ Yes ☐ No

29. If you are interested in getting **more training** of **any kind,** indicate the type you are interested in:

_____

Continued on Next Page

29 ___ For State Use Only

(DF-6 Revised 1971)

Your ideas and reactions in response to these questions would be appreciated.

Your comments will be kept strictly confidential.

30. What specific things about this vocational program have you found to be the most useful to you in your present job?

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31. What specific things about this vocational program have you found to be the least useful to you in your present job?

40 For State Use Only

32. Based on your experiences, what suggestions do you have for improving this vocational program?

44 For State Use Only

Department of Vocational &
Technical Education
University of Minnesota

(1) 0 7 (3) (8) (11) (13)

PLEASE LEAVE ALL RED SQUARES BLANK

(14) Date Month (17) Year

FOLLOW-UP QUESTIONNAIRE

ALL RESPONSES WHICH YOU GIVE WILL BE KEPT STRICTLY CONFIDENTIAL

GENERAL DIRECTIONS: Please complete ALL sections that apply. When you have completed the form return it in the enclosed return-addressed, stamped envelope. Your frank response is very important in order that the area vocational-technical institutes may continue to improve their programs.

I. PERSONAL INFORMATION

A. Name _____ (Last) (First) (Middle) B. Soc. Sec. No. (18) (26)

C. Present Address _____ (Street or Rural Route)

_____ (City) (State) (zip code)

D. Home Phone _____ (area code) Work Phone _____ (area code)

II. ADDITIONAL TRAINING

A. Since attending the area vocational-technical institute, what further educational training have you taken part in? (You may check more than one.)

(27) [1] None

(28) [1] On-the-job training (employer-sponsored training program)

(29) [1] Public area vocational school programs

(30) [1] Private vocational programs

(31) [1] University, college and/or junior college programs

(32) [1] Apprenticeship

(33) [1] Specialized occupational military training

(34) [1] Other _____ (specify)

III. EMPLOYMENT INFORMATION – Present status

A. Are you presently employed, unemployed or unavailable for employment? (Check *only* one of employed, unemployed, or unavailable for employment.)

(35)

[ ] Employed

[ ] Unemployed (You are actively looking for a job but cannot find one.)

[ ] Unavailable for employment (You cannot accept a job for one of the following reasons. Please check appropriate reason.)

(36)
[1] Military
[2] Further training or education
[3] Illness

(36)
[4] Housewife or pregnancy
[5] Presently not working and not interested in employment
[6] Other _____ (specify)

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IV. JOB INFORMATION: (IF YOU HAVE NOT BEEN EMPLOYED AT ANY TIME SINCE GRADUATION FROM THE AREA VOCATIONAL-TECHNICAL INSTITUTE, SKIP TO SECTION IX, p. 4.)

DIRECTIONS: 1. If you were employed at any time since graduating from the area vocational-technical institute, *complete the following section of the questionnaire.*

2. Please supply the requested information for each of the following jobs held during the time since graduating from the area vocational-technical institute. (Include names and addresses.)

(1) First Job (first job after leaving vocational school)

(37) (41) ☐☐☐☐☐
(42) (44) ☐☐☐
(45) (46) ☐☐

Firm Name _____
Firm Address _____
_____
City _____
Job Title _____
Job Duties _____
_____
Immediate Supervisor _____

Check one: (47)
☐ 1 Full-time job
☐ 2 Part-time job

Check one:
☐ Job related to training
☐ Job not related to training

Number of *months* in this job since graduation from vocational school (48)(49) ☐☐

(2) Present Job (job you are presently employed in. If same as first job, write SAME.)

(50) (54) ☐☐☐☐☐
(55) (57) ☐☐☐
(58) (59) ☐☐

Firm Name _____
Firm Address _____
_____
City _____
Job Title _____
Job Duties _____
_____
Immediate Supervisor _____

Check one: (60)
☐ 1 Full-time job
☐ 2 Part-time job

Check one:
☐ Job related to training
☐ Job not related to training

Number of *months* in this job since graduation from vocational school (61)(62) ☐☐

(3) How many jobs, including your first and present job, have you had since leaving the area vocational-technical institute? (63) ☐

V. ADVANCEMENT INFORMATION

A. Have you had a formal advancement in job classification (other than just salary increases) since taking your first job after leaving the area vocational-technical institute?

YES (64) ☐ 1 NO (64) ☐ 2

B. NOTE: The following item need not be completed if you prefer not to complete it. Please do not include overtime when calculating your monthly salary. (Check the appropriate squares.)

	Under $250	250-299	300-349	350-399	400-449	450-499	500-549	550-599	600-649	650-699	700+	
First Job Monthly Salary Range	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	(65-66)
Present Job Monthly Salary Range	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	(67-68)
	01	02	03	04	05	06	07	08	09	10	11	

(1) (2)
0 8

VI. JOB SATISFACTION SURVEY: (IF YOU ARE NOT PRESENTLY EMPLOYED, SKIP TO SECTION VII.)

DIRECTIONS: The purpose of this survey is to enable you to express your feelings of satisfaction or dissatisfaction with your present job. Please answer all questions by placing an "X" in the appropriate square.

A. How do you feel about your present job?

(9)
- [1] Like it very much
- [2] Like it somewhat
- [3] Neither like nor dislike it
- [4] Dislike it somewhat
- [5] Dislike it very much

B. Considering the characteristics of your present job, rate the degree to which you are satisfied with each of the following:

	Satisfied	Not Sure	Dissatisfied			Satisfied	Not Sure	Dissatisfied	
1. Salary	1	2	3	(10)	7. Pace (speed) of work	1	2	3	(16)
2. Fringe benefits	1	2	3	(11)	8. Facilities and equipment with which to do the job	1	2	3	(17)
3. Potential for advancement	1	2	3	(12)	9. Working conditions	1	2	3	(18)
4. Supervision and management	1	2	3	(13)	10. Variety of work tasks	1	2	3	(19)
5. Co-workers	1	2	3	(14)	11. Job security	1	2	3	(20)
6. Company policies and practices	1	2	3	(15)	12. Safety conditions	1	2	3	(21)

TRAINING PROGRAM QUESTIONNAIRE: (IF YOU ARE PRESENTLY EMPLOYED OR HAVE BEEN EMPLOYED AT ANY TIME DURING THE YEAR SINCE GRADUATION FROM THE AREA VOCATIONAL-TECHNICAL INSTITUTE, COMPLETE THIS SECTION OF THE QUESTIONNAIRE.)

DIRECTIONS: Please answer all of the following questions concerning the quality of the curriculum and the quality of the facilities and equipment associated with the program from which you graduated. Place an "X" in the appropriate square.

VII. CURRICULUM

A. In light of your experience on the job, how do you feel about the training you received in basic job-related (performance) skills at the area vocational-technical institute?

(22)
- [1] Excellent
- [2] Very good
- [3] Adequate
- [4] Inadequate

B. In light of your experiences on the job, how do you feel about the training you received in job-related general technical knowledge at the area vocational-technical institute?

(23)
- [1] Excellent
- [2] Very good
- [3] Adequate
- [4] Inadequate

VIII. FACILITIES AND EQUIPMENT

A. The equipment at the area vocational-technical institute in my training area was such that:

(24)
- [1] I found it very easy to adapt to the equipment on the job.
- [2] I had some problems adapting to the equipment on the job.
- [3] I found it very difficult to adapt to the equipment on the job.

B. In comparison to the facilities and equipment used on your present job, how would you rate your area vocational-technical institute facilities and equipment?

(25)
- [1] Area vocational-technical institute facilities and equipment were superior to those on the job.
- [2] Area vocational-technical institute facilities and equipment were similar to those on the job.
- [3] Area vocational-technical institute facilities and equipment were inferior to those on the job.

THIS SECTION IS TO BE COMPLETED BY ALL

DIRECTIONS: Please answer all of the following questions concerning the quality of instruction and the quality of the school and community services associated with the school from which you graduated. Place an "X" in the appropriate square.

IX. INSTRUCTION

A. How would you rate the teaching quality of instructors in your training program at the area vocational-technical institute?

(26) [1] Most of the instructors taught very well.
(26) [2] About the same number taught well as did not.
(26) [3] Most of the instructors did not teach well.

B. How would you rate the knowledge your instructors at the area vocational-technical institute possessed about their field?

(27) [1] Most were very knowledgeable.
(27) [2] About the same number were knowledgeable as were not.
(27) [3] Most were not knowledgeable.

C. How would you rate the interest shown by your instructors in your work progress at the area vocational-technical institute?

(28) [1] Most instructors were very interested in my progress.
(28) [2] Most instructors were somewhat interested in my progress
(28) [3] Most instructors did not seem interested in my progress.

D. How would you rate the extent to which your instructors at the area vocational-technical institute were up-to-date in their fields?

(29) [1] Most instructors were up-to-date.
(29) [2] About the same number were up-to-date as were not.
(29) [3] Most instructors were not up-to-date.

X. If you could start all over again, would you choose the same training program you received training in at the area vocational-technical institute? YES (30) [1] NO (30) [2]

XI. SCHOOL AND COMMUNITY SERVICES

A. Who was the *greatest* help to you in securing your first job? (Check one.)

(31) [1] Instructor, or other area vocational-technical institute personnel
[2] Private employment agency
[3] Relatives or friends
(31) [4] State employment agency
[5] Other _____ (specify)
[6] Does not apply (I have not been employed during the year)

B. How would you rate the *quality* of the following services as provided by the *area vocational-technical institute*? If you did not take advantage of the service, or if the service was not available, check "does not apply." (Please check only one square for each item.)

	Excellent	Good	Poor	Does not apply	
1. Job Placement	1	2	3	4	(32)
2. Counseling with personal problems	1	2	3	4	(33)
3. Help in making career decisions	1	2	3	4	(34)
4. Help in securing part-time employment	1	2	3	4	(35)
5. Help in obtaining financial assistance	1	2	3	4	(36)
6. Help in securing housing	1	2	3	4	(37)
7. Youth organizations	1	2	3	4	(38)
8. Recreational programs	1	2	3	4	(39)
9. Study, library and other learning resource facilities	1	2	3	4	(40)
10. Health services	1	2	3	4	(41)

C. How would you rate the *quality* of the services and facilities provided by the *community* in which the vocational school is located? (Check appropriate square for each of the items.)

	Excellent	Good	Poor	Does not apply	
1. Housing	1	2	3	4	(42)
2. Job opportunities	1	2	3	4	(43)
3. Recreation facilities	1	2	3	4	(44)

Department of Vocational & Technical Education
University of Minnesota

_____ 19____ .

ALL RESPONSES YOU GIVE WILL BE KEPT STRICTLY CONFIDENTIAL

EMPLOYER QUESTIONNAIRE

DIRECTIONS: Please complete ALL sections of this form even if the employee no longer works for your firm. When you have completed the form return it in the enclosed return-addressed, stamped envelope. Your responses will in no way affect the employee.

I. PERSONAL INFORMATION

A. Employee name _____ .
(Last) (First) (Middle)

B. Indicated Employer _____ City _____ .

II. EMPLOYMENT INFORMATION

If the employee has worked or works for your firm, please have a supervisor familiar with the work of the employee fill out this questionnaire.

Employee's Job Description _____

Supervisor's Name _____ Date _____ .
(Last) (First) (Middle)

Supervisor's Position _____ .

PLEASE COMPLETE REMAINING PORTIONS OF THIS QUESTIONNAIRE

Reprinted from David J. Pucel, The Minnesota Vocational Follow-up System: Rationale and Methods (Minneapolis: University of Minnesota, 1973). By permission from David J. Pucel, Unviersity of Minnesota.

(1) 0 9 (3) [ ] (8) [ ] (11) [ ] (12) [ ] (leave blank)

EMPLOYEE PERFORMANCE SURVEY

DIRECTIONS: Please indicate your satisfaction with the employee as compared with other workers in the same work group. If the worker is the only person employed with your firm, compare him with others who have worked in the same position. This information will be kept strictly confidential. Please respond to all questions.

I. Total number of *months* employee has been employed by your firm ... [ ] (13-14)

PLEASE RESPOND TO THE FOLLOWING QUESTIONS BY PLACING AN "X" IN THE APPROPRIATE SQUARE

II. In comparison with other workers in the same work group, how would you rate the employee on each of the following characteristics?

	above average	about average	below average	
1. The quality of employee's work	1	2	3	(15)
2. The quantity of employee's work	1	2	3	(16)
3. The degree to which the employee possesses specific job-related knowledge important to success on this job	1	2	3	(17)
4. The degree to which the employee is able to operate the equipment and apparatus used on the job	1	2	3	(18)
5. The degree to which the employee possesses basic reading, verbal and computational skills	1	2	3	(19)

III. In comparison to others in the employee's work group, how would you rate the employee on each of the following characteristics?

	above average	about average	below average	
1. Willingness to accept responsibility	1	2	3	(20)
2. Punctuality	1	2	3	(21)
3. Ability to work without supervision	1	2	3	(22)
4. Willingness to learn and improve	1	2	3	(23)
5. Cooperation with co-workers	1	2	3	(24)
6. Cooperation with management	1	2	3	(25)
7. Compliance with company policies, rules, and practices	1	2	3	(26)
8. Work attendance	1	2	3	(27)

IV. In comparison with other workers in the same work group, how would you rate the employee's over-all competency, effectiveness, proficiency, general over-all work attitudes, and other elements of successful job performance?

(28)

[1] In the top 1/4

[2] In the top 1/2 but not among the top 1/4

[3] In the bottom 1/2 but not among the lowest 1/4

[4] In the lowest 1/4

APPENDIX B

Pre-Follow-up Letter (While in School) to Request Permission for Participation: A Letter for Parents and Students

SCHOOL LETTERHEAD

March 1978

Dear Parent or Guardian:

The XYZ Department of Education and the local area vocational-technical school that your son or daughter attends are very interested in evaluating vocational education with the intent of improving those program offerings for students.

The name of your son or daughter has been selected on a random basis to help complete the study. The information he/she provides will help evaluate the program with the aim of improving its effectiveness.

All information provided by the student is strictly confidential and his/her name will not be associated in any way with the information given.

Your permission is requested to allow your son or daughter to participate in the study where the following instruments will be administered: Exit interview form and a follow-up form, one year after graduation.

Please check the appropriate box below signifying your approval or disapproval of this request, sign the form in the space provided, and return permission form in the enclosed envelope.

Thank you for your valuable assistance in helping to improve this portion of vocational-technical education for youth. You may withdraw your consent at any time. Please feel free to call me if you have any questions about this effort.

Sincerely,

Director of Vocational Education
ABC Area Vocational-Technical School

☐ Permission Granted ☐ Permission Not Granted

_____ _____

Parent/Guardian Signature Date

SCHOOL LETTERHEAD

April 19, 1978

Dear Student:

The XYZ Department of Education and your local AVTS are interested in evaluating vocational education programs currently operating in the school.

Shortly you will be asked to respond to some questions about your attitudes and experiences while in school, and then about six months after leaving school, we will be asking additional questions focusing on your experiences after leaving school. Your cooperation in this study is greatly appreciated. All information you provide is strictly confidential and your name will not be associated with the responses.

Thank you for your time and consideration as this effort is being accomplished. Your guidance counselor or the person conducting the survey session are available to answer any questions you may have concerning the study. Please be informed that you may stop participation in the study at any time.

Sincerely,

Director of Vocational Education
ABC Area Vocational-Technical School

Sirs:

I have read the above about helping to determine how well some portions of the local vocational-technical program have been operating. I understand that all information is strictly confidential and my name will not be associated with the information. I am willing to participate in the study and grant permission to those conducting the study to include me in the session(s).

Signed: _____

Print Name: _____

APPENDIX C

Dear Graduate: Cover Letter to
Accompany the Follow-up Questionnaire

SCHOOL LETTERHEAD

December 12, 1978

Dear Graduate:

The XYZ Department of Education and the ABC AVTS are very interested in evaluating the vocational education programs in the school.

Your name has been selected to help complete the study. The information you provide will help evaluate these vocational programs with the aim of improving their effectiveness.

Enclosed is a follow-up form which we are asking you to complete and return in the enclosed stamped, self-addressed envelope. All information provided is strictly confidential and your name will not be associated in any way with the information you give. By returning the follow-up form, you are allowing the information to be counted and analyzed.

Thank you for your valuable assistance in helping to improve vocational education for youth. You may withdraw your consent to tabulate the questionnaire responses at any time. Please feel free to call me if you have any questions about this effort.

Sincerely,

Director of Vocational Education
ABC Area Vocational-Technical School

APPENDIX D

Employer Follow-up Letters

SCHOOL LETTERHEAD

December 12, 1978

Dear Employer:

The XYZ Department of Education and the ABC Area Vocational School are very interested in evaluating the vocational programs in the school.

Because your company employs vocational education graduates we believe the information you provide will help to evaluate these vocational programs with the aim of improving their effectiveness.

Enclosed is a follow-up form which we are asking you to complete and return in the enclosed stamped, self-addressed envelope. All information provided is strictly confidential and your name will not be associated in any way with information you give.

Thank you for your valuable assistance in helping to improve vocational education for youth. You may withdraw your consent to tabulate the questionnaire responses at any time. Please feel free to call me if you have any questions about this effort.

Sincerely,

Director of Vocational Education
ABC Area Vocational School

SCHOOL LETTERHEAD

December 26, 1978

Dear Employer:

About two weeks ago we mailed you a follow-up form concerning the evaluation of vocational education at the local area vocational-technical school. At that time we stated that all information provided is strictly confidential.

Many other employers and community contact persons have completed and returned their follow-up forms. It seems these people have welcomed the opportunity to help evaluate the vo-tech school's program. However, according to our records, you have not returned the follow-up form as yet.

Because a high rate of response is essential to the study's accuracy, we again ask for your assistance. Won't you please help us improve the vocational education at the local vo-tech school by completing the enclosed follow-up forms and mailing them to us?

For your convenience again, we have enclosed an addressed, postage paid envelope. If you have completed it and it is on its way, thank you for doing so.

Yours truly,

Director of Vocational Education
ABC Area Vocational-Technical School

APPENDIX E

Student Follow-up Letter - Third Mailing

ABC AVTS FOLLOW-UP

Third Mailing

HELP! we're looking for a MISSING follow-up form. If you've returned your follow-up form, you've already helped and don't need to read the rest of this message.

You are only one person, but one person can really make a difference. You can still help us by returning your completed follow-up form today.

Thank you.

Yours truly,

Vocational Teacher
ABC Area Vocational Technical School

P.S. Because we need to keypunch the information during the week of January 23rd, I would appreciate your sending the completed follow-up form in by then. A mailing label is enclosed for your convenience. Thanks.

APPENDIX F

Cost Estimates and Comparisons of Methods for Doing Follow-up Studies

Table 2

Cost Estimates and Comparisons of Methods for Doing Follow-up Studies

Type	Cost		Contacts		Total Cost Per		Operation Cost Per	
	Total	Operation	Attempts	Responses	Attempt	Response	Attempt	Response
In House								
Computer	$ 3,417.99	$ 1,397.99	7,048	7,048	$ 0.485	$ 0.485	$ 0.198	$ 0.198
Manual	738.84	418.84	485	485	1.523	1.523	0.864	0.864
Total	$ 4,156.83	$ 1,816.83	7,533	7,533	$ 0.552	$ 0.552	$ 0. 241	$ 0.241
Mail Out								
Computer	$63,800.01	$46,482.55	14,234	7,780	$ 4.482	$ 8.201	$ 3.266	$ 5.975
Manual	606.53	483.62	227	125	2.672	4.852	2.130	3.869
Total	$64,406.54	$46,966.17	14,461	7,905	$ 4.454	$ 8.148	$ 3.248	$ 5.941
Personal Interview								
Computer	$ 7,770.21	$ 5,662.31	271	271	$28.672	$28.672	$20.894	$20.894
Manual	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Total	$ 7,770.21	$ 5,662.31	271	271	$28.672	$28.672	$20.894	$20.894

Source: R. C. Baugh, Follow-Up Cost Study (SC5), Tex-sis Student Information System-Student Follow-up (Austin, Texas: Texas Education Agency, 1976).

APPENDIX G

Percentage of Expenditures by Type

TABLE 3

Percentage of Expenditures by Type

Type of Expenditure	% of Total Expense	% of Operation Expense
Salaries and Benefits	74.6%	70.4%
Supplies	4,9%	9.3%
Mail	3.8%	5.2%
Telephone	1.4%	1.3%
Duplication	2.6%	3.5%
Computer	7.7%	8.2%
Travel	5.0%	2.1%

Source: R. C. Baugh, Follow-Up Cost Study (SC5), Tex-sis Student Information System-Student Follow-Up (Austin, Texas: Texas Education Agency, 1976).

APPENDIX H

Follow-up Quarter Time Sheet

FOLLOW-UP
Quarterly Time Sheet

Institution's Name_____

Beginning Date Of This Quarter_____

Ending Date Of This Quarter_____

1. DEVELOPMENT

CATEGORY	# of PERSONNEL	# of HOURS
Administrative		
Clerical		

2. IMPLEMENTATION

CATEGORY	# of PERSONNEL	# of HOURS
Administrative		
Clerical		

3. OPERATION

CATEGORY	# of PERSONNEL	# of HOURS
Administrative		
Clerical		

4. DISSEMINATION

CATEGORY	# of PERSONNEL	# of HOURS
Administrative		
Clerical		

The blank spaces below Clerical are to be utilized for other types of personnel.

Source: R. C. Baugh, Follow-Up Cost Study (SC5), Tex-sis Student Information System-Student Follow-up (Austin, Texas: Texas Education Agency, 1976).

APPENDIX I

Follow-up Cost Sheet

FOLLOW-UP
Cost Sheet

PHASE: DEVELOPMENT _____, IMPLEMENTATION _____,

OPERATION _____, DISSEMINATION _____,

Beginning Date of This Quarter _____

Ending Date of This Quarter _____

SALARIES:		AMOUNT*
Administrative:		_____
Clerical:		_____
_____:		_____
_____:		_____
_____:		_____
EQUIPMENT:		_____
SUPPLIES:		_____
COMMUNICATIONS:	Mail	_____
	Telephone	_____
	Other	_____
SERVICES:	Duplication	_____
	Computer	_____
	Other	_____
TRAVEL:		_____
FRINGE BENEFITS:	Social Security	_____
	Retirement	_____
	Workman;s Compensation	_____
	Other	_____
TOTAL		_____

Signature of Director: _____

Source: R. C. Baugh, Follow-Up Cost Study (SC5), Tex-sis Student Information System-Student Follow-up (Austin Texas: Texas Education Agency, 1976).

APPENDIX J

OE Instructional Codes and Titles

Conversion Table: SOC Codes to OE Codes Relating to Vocational Education Programs

OE INSTRUCTIONAL CODES AND TITLES

01.0100	Agriculture Production
01.0200	Agriculture Supplies/Services
01.0300	Agriculture Mechanics
01.0400	Agriculture Products
01.0500	Ornamental Horticulture
01.0600	Agriculture Resources
01.0700	Forestry
01.9900	Other Agriculture
04.0100	Advertising Services
04.0200	Apparel & Accessories
04.0300	Automotive
04.0400	Finance & Credit
04.0500	Floristry
04.0600	Food Distribution
04.0700	Food Services
04.0800	General Merchandise
04.0900	Hardware, Building Materials, etc.
04.1000	Home Furnishings
04.1100	Hotel & Lodging
04.1200	Industrial Marketing
04.1300	Insurance
04.1500	Personal Services
04.1700	Real Estate
04.1800	Recreation & Tourism
04.1900	Transportation
04.2000	Retail Trade, other
04.9900	Other Distributive Education
07.0101	Dental Assistant
07.0102	Dental Hygienist (Assoc.)
07.0203	Medical Lab. Assisting
07.0299	Other Med. Lab. Technol.
07.0301	Nursing, Associate Degree
07.0302	Practical (Voc.) Nursing
07.0303	Nursing Assistant (Aide)
07.0399	Other Nursing
07.0501	Radiologic Technology
07.0800	Mental Health Technology
07.0903	Inhalation Therapy Tech.
07.0904	Medical Assistant
07.0906	Health Aide
07.0907	Medical Emergency Tech.
07.9900	Other Health Occupations Education

OE INSTRUCTIONAL CODES AND TITLES

09.0201	Care & Guidance of Children
09.0202	Clothing Mgt., Prod., & Service
09.0203	Food Mgt., Prod., & Service
09.0204	Home Furn., Equip., Serv.
09.0205	Inst. & Home Mgt., & Sup.
09.0299	Other Occupational Preparation for Homemaking
14.0100	Accounting & Computing
14.0201	Computer & Console Operations
14.0203	Programmers
14.0299	Other Business Data Processing
14.0300	Filing, Office Machines
14.0400	Info., Communic. Occupations
14.0500	Materials, Support, Transportation, etc.
14.0600	Personnel, Training & Related
14.0700	Steno., Secy., & Related
14.0800	Supervisory and Admin. Management
14.0900	Typing & Related
14.9900	Other Office Occupations Education
16.0103	Architectural Technology
16.0104	Automotive Technology
16.0106	Civil Technology
16.0107	Electrical Technology
16.0108	Electronic Technology
16.0110	Environmental Control Technology
16.0111	Industrial Technology
16.0113	Mechanical Technology
16.0117	Scientific Data Technology
16.0601	Commercial Pilot Training
16.0602	Fire & Fire Safety Technology
16.0605	Police Science
16.9902	Water & Waste Water Technology
16.9900	Other Technical Education
17.0100	Air Conditioning
17.0200	Appliance Repair
17.0301	Body & Fender Repair
17.0302	Auto Mechanics
17.0400	Aviation Occupations
17.0700	Commercial Art Occupations
17.0900	Commercial Photography Occupations
17.1001	Carpentry
17.1002	Electricity
17.1004	Masonry
17.1009	Other Construction & Maintenance
17.1100	Custodial Services

OE INSTRUCTIONAL CODES AND TITLES

17.1200	Diesel Mechanic
17.1300	Drafting Occupations
17.1400	Electrical Occupations
17.1500	Electronic Occupations
17.1700	Foremanship, Supervision & Management Development
17.1900	Graphic Arts Occupations
17.2100	Instr. Maintenance & Repair
17.2200	Maritime Occupations
17.2302	Machine Shop
17.2303	Machine Tool Operation
17.2305	Sheet Metal
17.2306	Welding & Cutting
17.2307	Tool & Die Making
17.2399	Other Metalworking Occupations
17.2400	Metallurgy Occupations
17.2602	Cosmetology
17.2699	Other Personal Services
17.2700	Plastics & Occupations
17.2801	Fireman Training
17.2802	Law Enforcement Training
17.2899	Other Public Services
17.2900	Quantity Food Occupations
17.3000	Refrigeration
17.3100	Small Engine Repair
17.3200	Sta. Energy Sources Occupations
17.3300	Textile Production & Fabrication
17.3500	Upholstering
17.3600	Woodworking Occupations
17.9900	Other Trade and Industrial Education

CONVERSION TABLE:

SOC CODES TO OE CODES RELATING TO VOCATIONAL EDUCATION PROGRAMS

14 MANAGEMENT RELATED OCCUPATIONS	
Personnel, Training, and Related Occupations	14. 06 00
Management Development	17. 31 00
Other Related	
17 COMPUTER, MATHEMATICAL, AND OPERATIONS RESEARCH OCCUPATIONS	
Scientific Data Processing	16. 01 30
Other Related	
29 REGISTERED NURSES	
Nursing (Associate Degree)	07. 03 01
Other Related	
32 WRITERS, ARTISTS, PERFORMERS AND RELATED WORKERS	
Commercial Art Occupations	17. 07 00
Graphic Arts	17. 08 01
Custom Drapery and Window Treatment Designer/Maker	09. 05 05
Commercial Photography	17. 08 08
Other Related	
36 HEALTH TECHNOLOGISTS AND TECHNICIANS	
Dental Hygienists	07. 01 02
Nuclear Medical Technician	07. 02 08
Radiologic Technician	07. 02 07
Practical (Vocational) Nurse	07. 03 02
Medical Laboratory Technician	07. 02 03
Emergency Medical Technician I, II, III	07. 08 01 (& 02, 03)
Surgical Technician	07. 03 04
Occupational Therapy Aide	07. 04 02
Respiratory Therapy Technician	07. 02 12
Opthalmic Technician	07. 06 00
Mental Health Technician	07. 06 00
Other Related	
37 ENGINEERING AND RELATED TECHNOLOGISTS AND TECHNICIANS	
Electrical Technology	16. 01 08
Electronic Technology	16. 01 09
Instrumentation Technology	16. 01 14
Industrial Production Technology	16. 01 13
Mechanical Design Technology	16. 01 25
Metallurgical Technology	16. 01 26
Architectural Technology	16. 01 03
Aeronautical Technology	16. 01 01
Civil Technology	16. 01 07
Electromechanical Technology	16. 01 10

Automotive Equipment Technology	16. 01 04
Drafting Occupations	17. 12 00
Other Related	

38 SCIENCE TECHNOLOGISTS AND TECHNICIANS

Chemical Technology	16. 01 05
Oceanographic Biological Technology	16. 05 13
Environmental Control Technology	16. 01 11
Other Related	

39 TECHNICIANS: EXCEPT HEALTH AND SCIENCE

Programmers	14. 02 02
Other Related	

41 SALES OCCUPATIONS, COMMODITIES

Floristry & Farm and Garden Supplies Marketing	04. 05 00
Agricultural Supplies/Services	01. 02 00
Petroleum Marketing	04. 16 00
Automotive, Recreational & Agricultural Vehicles & Accessories	04. 03 00
Apparel and Accessories	04. 02 00
Home Furnishings Marketing	04. 10 00
Hardware & Building Materials Marketing	04. 09 00
Food Marketing	04. 06 00
General Merchandise Retailing	04. 08 00
International Marketing	04. 14 00
Retailing	04. 22 01
Wholesaling	04. 22 02
Other Related	

42 INSURANCE, REAL ESTATE, AND SERVICE SALES OCCUPATIONS

Insurance	04. 13 00
Real Estate Marketing	04. 17 00
Finance and Credit Services	04. 04 00
Personal Services Marketing	04. 15 00
Transportation & Travel Marketing	04. 19 00
Recreation Marketing	04. 18 00
Hotel, Motel & Lodging Services	04. 11 00
Advertising & Display Services	04. 01 00
Food Services Marketing	04. 07 00
Other Related	

45 SUPERVISORS: CLERICAL OCCUPATIONS

Clerical and Office Supervisors	14. 08 04
Other Related	

46-47 CLERICAL OCCUPATIONS, EXCEPT EQUIPMENT OPERATORS

Secretaries	14. 07 02
Stenographers	14. 07 03
General Office, Clerical & Related	14. 03 00
Information Communication & Related Occupations	14. 04 00
Other Related	

47 BOOKKEEPERS, BILLING, ACCOUNTING AND STATISTICAL CLERKS

Accounting and Related Occupations	14. 02 00
Other Related	

48 COMPUTING AND OFFICE EQUIPMENT OPERATORS

Computer and Console Operators	14. 02 03
Peripheral Equipment Operators	14. 02 05
Other Related	

51 PROTECTIVE SERVICE OCCUPATIONS

Volunteer Fireman	99. 05 00
Fire and Fire Safety Technology	16. 05 05
Firefighting Training	17. 22 01
Police Science Technology	16. 05 21
Law Enforcement Training	17. 22 02
Other Related	

52 SERVICE OCCUPATIONS, EXCEPT PRIVATE HOUSEHOLD & PROTECTIVE

521 Food & Beverage Preparation and Service Occupations	
Food Management, Productions & Services	09. 04 00
Quantity Food Occupations	17. 23 00
Other Related	
523 Health Service Occupation	
Dental Assistants	07. 01 01
Physical Therapy Aide	07. 04 03
Medical Assistant	07. 08 05
Environmental Health Assistant	07. 08 06
Nursing Assistant (Aide, Orderly)	07. 03 03
Other Related	
524 Cleaning and Building Service Occupations Except Private Households	
Custodial Services	17. 10 01
Other Related	
525 Personal Service Occupations	
Barbering	17. 21 01
Cosmetology	17. 21 02
Other Related	
526 Child Care Workers, Except Private Households	
Child Care & Guidance, Management & Service Occupations	09. 02 00
Other Related	

55 FARM OPERATORS AND MANAGERS

Production Agriculture	01. 01 00
Agricultural Products, Processing & Marketing	01. 04 00
Renewable Natural Resources	01. 06 00
Horticulture	01. 05 00
Other Related	

57 FORESTRY & LOGGING OCCUPATIONS

Forestry Production	01. 07 01
Forestry Technology	16. 05 06
Other Related	

58 FISHERS, HUNTERS, AND TRAPPERS

Commercial Fishing	17. 18 01
Other Related	

61 CONSTRUCTION TRADES

Masonry (Trowel Trades)	17. 09 02
Carpentry	17. 09 01
Electricity	17. 10 02
Plumbing and Pipefitting	17. 09 10
Other Related	

63-65 TRANSPORTATION OCCUPATIONS

Ship and Boat Operation and Maintenance	17. 18 03
Seamanship	17. 18 02
Aviation Occupations	17. 05 00
Commercial Pilot Training	16. 05 03
Other Related	

67 MECHANICS AND REPAIRERS

Automotive Mechanic	17. 03 01
Small Engine and Chassis Repair	17. 24 01
Automotive Body Mechanic	17. 04 01
Farm Mechanics	01. 03 00
Motor Repair	17. 03 00
Diesel Equipment Mechanic	17. 11 01
Industrial Atomic Energy	17. 16 00
Stationary Energy Sources Occupations	17. 15 00
Appliance Repair Occupations	17. 02 00
Heating & Air Conditioning	17. 01 01
Cooling & Refrigeration	17. 01 02
Instrument Maintenance & Repair Occupations	17. 17 00
Business Machine Maintenance	17. 06 00
Electronic Occupations	17. 14 00
Other Related	

72 PRECISION PRODUCTION OCCUPATIONS

Machine Shop	17. 19 04
Tool and Die Making	17. 19 05
Sheet Metal	17. 19 07
Machine Tool Operation	17. 19 03
Woodworking Occupations	17. 28 00
Alterationist	09. 03 03
Custom Apparel/Garment Seamtress	09. 03 06
Upholstering	17. 27 00
Custom Upholster and Slipcover	09. 05 04
Leatherworking	17. 26 00
Textile Production Fabrication & Maintenance Occupations	17. 25 00
Dental Laboratory Technician	07. 01 03
Other Related	

77 FABRICATOR, ASSEMBLERS, AND HAND FINISHERS

Combination Welding	17. 19 08
Gas Welding	17. 19 09
Electric Welding	17. 19 10
Other Related	

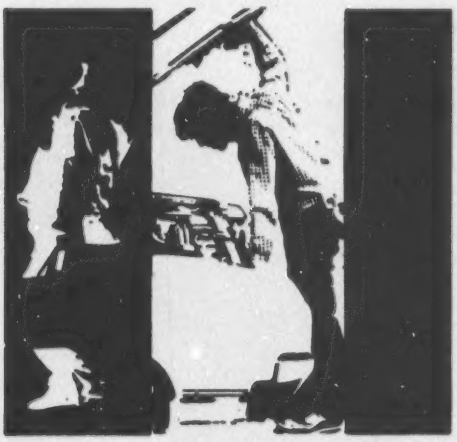
99 OCCUPATIONS NOT ELSEWHERE CLASSIFIED

Occupation of Homemaking	(09. 01)
Other, Unpaid Employment or Volunteer	

APPENDIX K

Award Winning Follow-up Brochure

HIGH SCHOOL DROPOUTS



HIGHLIGHT RESULTS OF A SURVEY OF PHILADELPHIA PUBLIC HIGH SCHOOL PUPILS WHO LEFT SCHOOL IN 1974/75

prepared by the DIVISION OF ADMINISTRATIVE & SURVEY RESEARCH SERVICES | OFFICE OF RESEARCH & EVALUATION

QUESTIONS FOR DROPOUTS

ARE YOU WORKING?

ARE YOU UNEMPLOYED?

ARE YOU LOOKING FOR WORK?

ARE YOU BACK IN SCHOOL NOW?

ARE YOU IN THE ARMED FORCES?

WHAT WERE YOUR REASONS FOR LEAVING SCHOOL?

WITH WHOM DID YOU TALK ABOUT LEAVING SCHOOL?

THESE RESULTS OF THE FIRST SURVEY OF PHILADELPHIA PUBLIC HIGH SCHOOL DROPOUTS WERE OBTAINED FROM 1,306 RESPONSES

QUESTIONNAIRES WERE MAILED IN SEPTEMBER 1975 TO ALL THE 1974-75 DROPOUTS LISTED IN THE PUPIL DIRECTORY FILE

OF THE 1,306 RESPONDENTS AS OF OCTOBER, 1975

22% WERE WORKING AND NOT ATTENDING SCHOOL

4% WERE WORKING AND ATTENDING SCHOOL

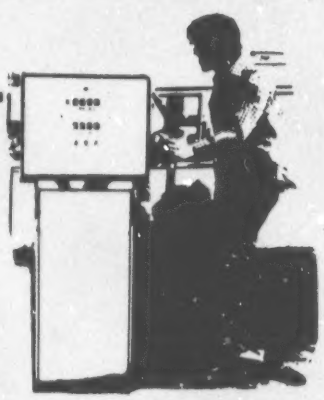
49% WERE UNEMPLOYED

86% OF THE UNEMPLOYED WERE LOOKING FOR WORK

14% WERE NOT WORKING AND NOT LOOKING FOR WORK (DISCOURAGED WORKERS, HOMEMAKERS)

20% WERE BACK IN SOME EDUCATIONAL PROGRAM

9% WERE IN THE ARMED FORCES



OF THE 341 EMPLOYED RESPONDENTS

ALMOST ONE-THIRD OF THE RESPONDENTS WHO WERE WORKING HELD UNSKILLED JOBS

AN ADDITIONAL 22% WERE IN SERVICE OCCUPATIONS, (WAITRESSES, GUARDS, ETC.)

CRAFTSMEN AND OPERATORS, INCLUDING APPRENTICES, CONSTITUTED 9% OF THE TOTAL

10% WORKED IN OFFICE JOBS

A SLIGHT DIFFERENCE IN HOURLY EARNINGS WAS REPORTED BETWEEN BLACKS ($2.44) AND WHITES ($2.50)

A GREATER DIFFERENCE IN HOURLY EARNINGS EXISTED BETWEEN MALES ($2.58) AND FEMALES ($2.34)

OF THE 535 UNEMPLOYED RESPONDENTS WHO WERE LOOKING FOR WORK

13% WANTED OFFICE WORK

5% WANTED WORK IN HEALTH SERVICES

14% WANTED JOBS IN SERVICE OCCUPATIONS (I.E., TEACHER AIDES, NURSES AIDES AND NON-TEACHING ASSISTANTS)

41% WANTED ANY KIND OF JOB

OF THE 252 RESPONDENTS IN SCHOOLS

22% WERE EMPLOYED

63% WERE WORKING FOR THEIR GENERAL HIGH SCHOOL EQUIVALENCY DIPLOMA (GED)

28% WERE ATTENDING PHILADELPHIA STANDARD EVENING HIGH SCHOOLS

23% WERE IN PRIVATE HIGH SCHOOLS

9% WERE IN TECHNICAL OR TRADE SCHOOLS

8% WERE IN FEDERAL PROGRAMS

WHY DID YOU LEAVE SCHOOL?

OF 1,005 ANSWERS

11%	RETAINED IN GRADE
14	NEEDED OR GOT A JOB
16	PREGNANCY, MARRIAGE, OR BABY CARE
12	PERSONAL OR HOME PROBLEMS
21	FOUND SCHOOL "BORING AND A HASSLE"
6	POOR ATTENDANCE, "GOT PUT OUT"
3	"QUIT - WASN'T LEARNING"
3	GOVERNMENT SERVICE (JOB CORPS - ARMED SERVICES, ETC.)
2	LEFT TO GO TO ANOTHER SCHOOL
3	"GANGS"
4	DESIRED COURSES NOT AVAILABLE
5	OTHER
100%	

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WITH WHOM DID YOU TALK ABOUT LEAVING SCHOOL?

Almost a third of the respondents said they spoke to no one about their decision to leave school. More than half said they did not talk to any school personnel before they dropped out. More than a third talked to counselors and a fifth talked to other school personnel and family as well. Almost a quarter of these respondents consulted only their families, and almost as many consulted with both family and school personnel.

THE DROPOUTS 1974-75 THE GRADUATES 1974

HIGHLIGHTS

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	1974-75 DROPOUTS	1974 GRADUATES
EMPLOYED (EXCLUSIVELY)	22%	29%
MEDIAN HOURLY WAGE	$2.47	$2.58
UNEMPLOYED - LOOKING FOR WORK	42%	10%
MILITARY SERVICE	9	2
IN SCHOOL OR COLLEGE	20	56
BLACK	64	54
NON-BLACK	36	46
MALE	57	46
FEMALE	43	54

THE QUESTIONNAIRE... A SIMPLE POST CARD

The survey shows that dropouts, though a more mobile group than graduates (twice as many dropout questionnaires were undelivered by the Postal Service), and perhaps a group less kindly disposed toward the Philadelphia Public School System, responded to a survey at a rate sufficient to yield an adequate number of responses for analysis purposes. The responses were representative of the group contacted.

PLEASE COMPLETE, TEAR OFF, AND MAIL IMMEDIATELY. THANK YOU.

Are you working now? ☐Full time ☐Part time

Type of work: _____

Wages: $_____ per hour.

Are you unemployed? ☐Yes ☐No

Are you looking for work? ☐Yes No

If yes, what kind? _____

Have you had a job since leaving high school? ☐Yes ☐No

If yes, what kind? _____

With whom did you talk about leaving school? (Check all that apply.)

☐Counselor ☐Teacher ☐Principal/Vice Principal

☐Family ☐No one ☐Other

Why did you leave school before graduating? _____

_____

Are you going to school now? ☐Yes ☐No

School _____

Course _____ ☐GED _____ ☐Tech/trade _____

Other _____

NOTICE TO PARENTS OR GUARDIAN:
If the person to whom this is addressed is in the armed forces, please check here. ☐

SCHOOL DISTRICT OF PHILADELPHIA - OFFICE OF RESEARCH & EVALUATION

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CONCLUSIONS

A number of unsolicited comments from the respondents indicated an awareness that they had "messed things up." Although they had been retained in grade one or more times, some dropouts wanted help in returning to school. Many expressed thanks for our interest in them.

The reasons for dismissal coded on the individual school records differ considerably from the reasons given by the dropouts in this survey. Although school records show the students were leaving school to go to work, many of them left because they were dissatisfied with their progress in school. Among the respondents whose records show they left school in order to go to work, 11% reported that their reason for leaving school was that they were retained in grade. An additional 17% of this group said that they left school because it "was boring and a hassle." In fact, only 20% of these respondents stated in the survey that they left school to go to work.

	1973-74 DROPOUTS	1974-75 DROPOUTS
EMPLOYED (EXCLUSIVELY)	28%	22%
MEDIAN HOURLY WAGE	$2.21	$2.47
UNEMPLOYED - LOOKING FOR WORK	35%	42%
MILITARY SERVICE	13	9
IN SCHOOL OR COLLEGE	16	20

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THE SCHOOL DISTRICT OF PHILADELPHIA

DR. MICHAEL P. MARCASE, Superintendent of Schools

MR. DAVID A. HOROWITZ, Deputy Superintendent for School Services

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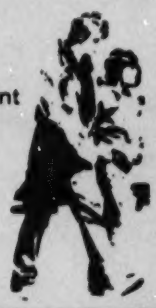

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Copies of both this summary brochure and a more detailed report are available from the Office of Informational Services, 299-7850.

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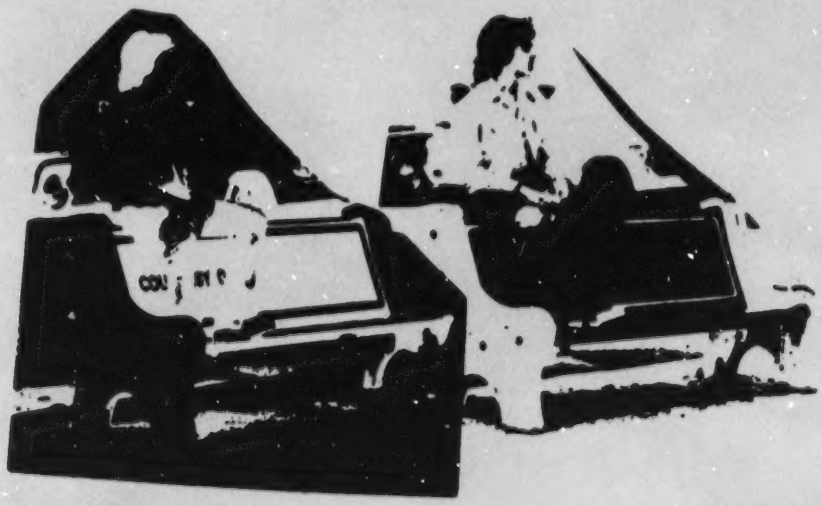
OFFICE OF RESEARCH AND EVALUATION
THE SCHOOL DISTRICT OF PHILADELPHIA

MARCH, 1976



SECTION 10

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